
Print & Copy Quality Comparison

HP Officejet 6500 AiO Printer Series vs. Brother MFC-5490CN, Canon PIXMA MX860 & Epson WorkForce 600 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 WorkForce 600	⊙	⊙	✗	✗	✗	⊙	⊙

* 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 WorkForce 600

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.



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



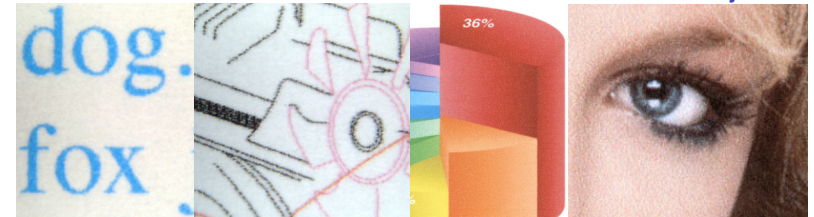
- Color Text and Lines were *sharp but lacked saturation*; Tertiary color Lines exhibited screening
- Tints & Blends were slightly *desaturated*; distracting screening pattern was noticeable in Yellow blends; Color Images had a *Magenta cast and appeared soft and flat*

Epson WorkForce 600



- Color Text and Lines were *rendered grainy with distracting screening*; fine Lines were rendered broken
- Although Tints & Blends and Color Images were *saturated*, they had an *Orange cast with distracting graininess* and Images lacked shadow and highlight detail

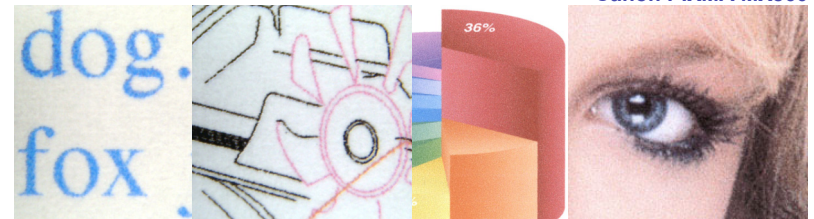
HP Officejet 6500



Brother MFC-5490CN



Canon PIXMA MX860



Epson WorkForce 600



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 WorkForce 600



- 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 WorkForce 600



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 WorkForce 600



- ° 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**

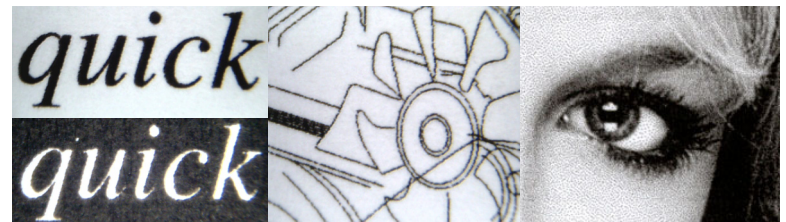
HP Officejet 6500



Brother MFC-5490CN



Canon PIXMA MX860



Epson WorkForce 600



Comparison in Grayscale default (Epson: Black Ink Only) modes for Plain paper.
Independent testing by SpencerLab Digital Color Laboratory, commissioned by Hewlett-Packard Company.



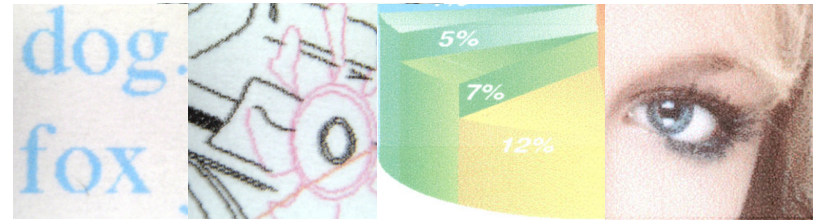
Print Output – Color (Draft)

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

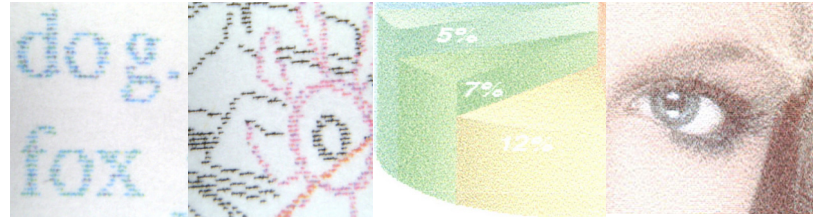


Brother MFC-5490CN



- 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

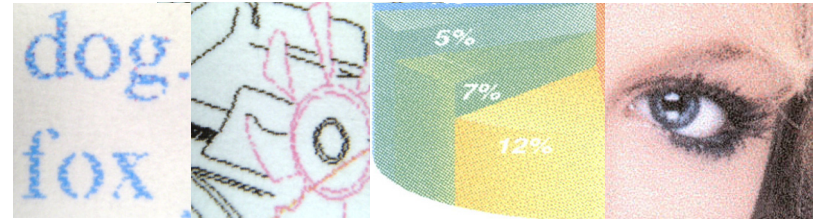


Canon PIXMA MX860



- Color Text and Lines exhibited **acceptable saturation, but had visible dropouts and were jagged with distracting screening pattern**; Color Lines were rendered broken
- Tints & Blends exhibited **distracting screening pattern**; Color Images had a **Magenta cast and were flat and grainy, resulting in loss of detail**

Canon PIXMA MX860

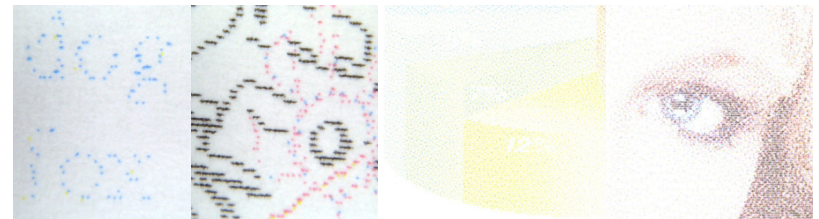


Epson WorkForce 600



- 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 WorkForce 600



Comparison in Draft modes for Plain paper.

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



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



HP Officejet 6500

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



Brother MFC-5490CN

Canon PIXMA MX860



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



Canon PIXMA MX860

Epson WorkForce 600



- ° 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



Epson WorkForce 600

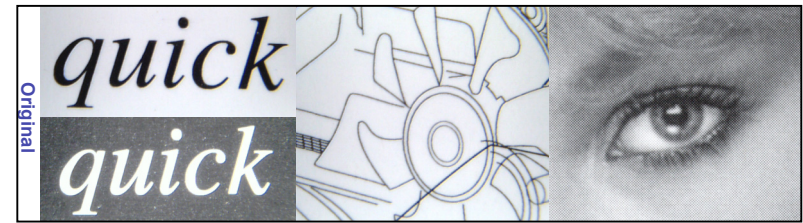
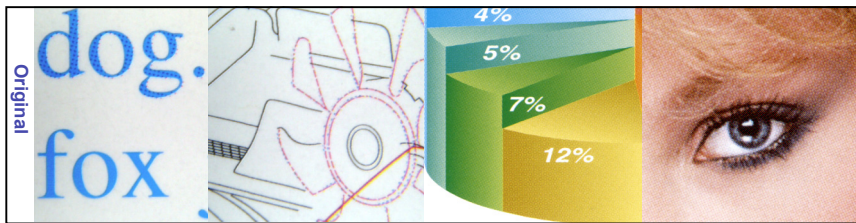
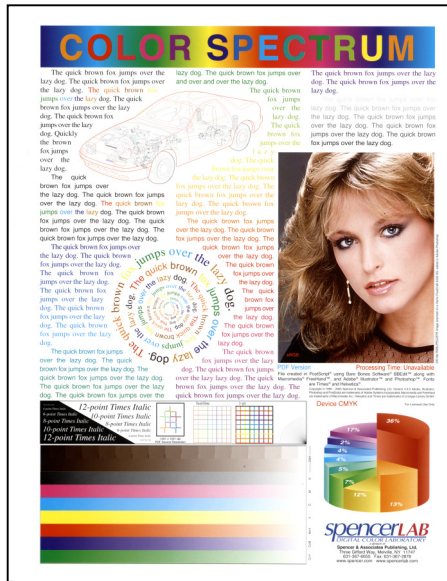
Comparison in Grayscale (Epson: Black Ink Only) Draft modes for Plain paper.
Independent testing by SpencerLab Digital Color Laboratory, commissioned by Hewlett-Packard Company.



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



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



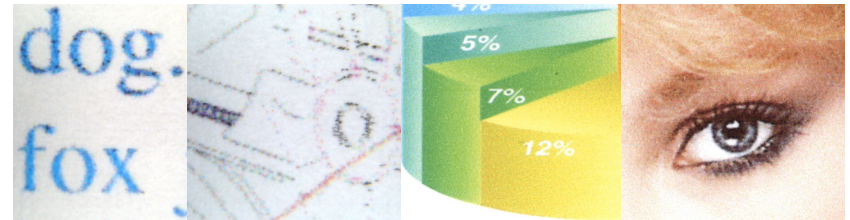
Copy Output – Color (Default)

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

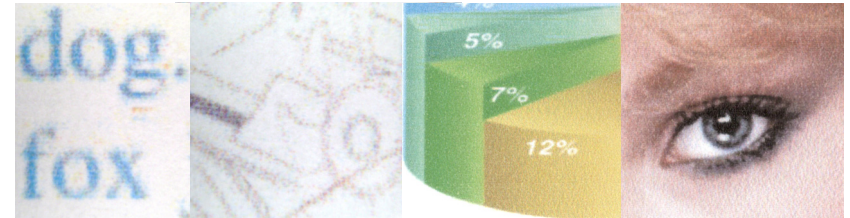


Brother MFC-5490CN



- 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

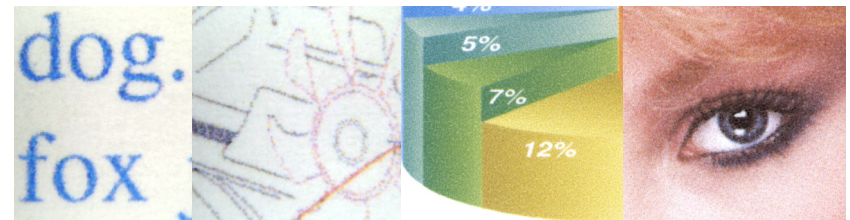


Canon PIXMA MX860



- 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

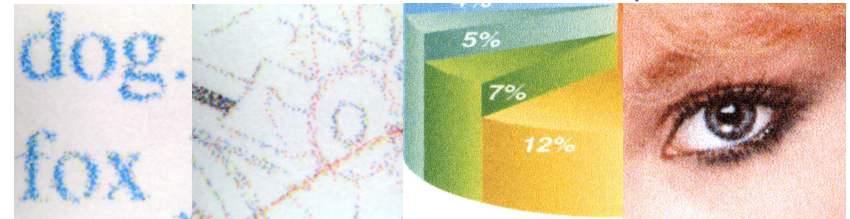


Epson WorkForce 600



- 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 WorkForce 600



Comparison in Color default modes on Plain paper.

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



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 distracting streaking**; Images were sharp in comparison to other tested AiOs



HP Officejet 6500

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; **distracting contouring was apparent**



Brother MFC-5490CN

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 **distracting streaking pattern**; Images had **plugged shadows, blown highlights, and visible banding**

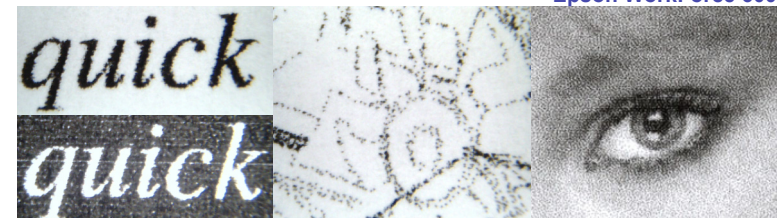


Canon PIXMA MX860

Epson WorkForce 600



- 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



Epson WorkForce 600

Comparison in Black (B&W) default modes on Plain paper.

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



Print & Copy Quality – Methodology

Competitive Products Tested — Color Inkjet All-in-Ones

HP Officejet 6500 All-in-One

Brother MFC-5490CN, Canon PIXMA MX860, and Epson WorkForce 600

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

◦ HP Officejet 6000 Printer and Epson WorkForce 40 Color Printer

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/Black 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



* Printer-only version model numbers provided by HP.

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



HP Officejet 6500 AiO Printer Series

Office Inkjet Comparison Tests



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