AUGUST 2025

Canon FINE Inks vs. Third-Party "Compatible" Inks

Background

Keypoint Intelligence was commissioned by Canon Europe B.V. to conduct a comparative assessment of genuine Canon FINE ink cartridges against compatible third-party alternatives. Testing was conducted using four Canon printer models: the PIXMA MG2556S, PIXMA MG3650S, PIXMA TS3550i (all employing FINE cartridges), along with the PIXMA TS705a (a single-cartridge system), and each device was dedicated to a single cartridge brand. Cartridge brands evaluated in this study included the Canon OEM products and 10 third-party brands, each tested using 10 full sets of CMYK cartridges per device. Page yield and image quality were evaluated using the ISO 24712 five-page suite as part of the ISO/IEC 24711 methodology, supplemented with Keypoint Intelligence's proprietary test targets and image quality benchmarks.

Page Yield was measured by printing full sets of the ISO 24712 suite continuously until either depletion of the ink supply or visible image degradation occurred. The performance of both OEM and third-party cartridges was tracked from initial output through to end-of-life, with average and lower confidence bound (LCB) yields calculated based on all fully exhausted or failed cartridges. Yields for additional colours, such as photo black or grey, were estimated via proxy methods as defined by ISO standards. Reliability testing recorded any cartridge malfunctions or anomalies—including out-of-box failures (defined as cartridges that were physically damaged, leaked, or failed to produce more than 10 acceptable pages), premature end-of-life (yielding less than 70% of Canon's claimed output), ink leaks, print defects, and any adverse impact on printer performance.

Image Quality was assessed throughout the life of the cartridges using both visual and instrument-based evaluation. Samples were printed on 80 gsm plain paper and Canon Photo Paper Plus (260 gsm) at 500-impression intervals and evaluated for halftone reproduction, text and fine-line sharpness, and colour fidelity. A visual grading system was applied, and output was further analyzed using X-Rite spectrophotometers and ColorThink Pro profiling software to determine colour gamut volume and consistency across impressions. Ink Stability was tested by subjecting printed samples to environmental stressors, including waterfastness (through controlled water spillage and runoff tests) and smudge resistance (via highlighter overwriting conducted after a brief drying period). Samples were allowed to dry for 24 hours in a climate-controlled lab before assessment.

Executive Summary

Canon's genuine cartridges achieved 100% out-of-box success, with no reliability defects observed across any of the devices tested. In stark contrast, reliability issues plagued many third-party brands: several suffered from early end-of-life failures and out-of-box defects. For example, five out of 10 third-party brands tested with the PIXMA MG2556S saw at least one cartridge which was classified as early end-of-life, and seven of the 10 third-party brands used with the PIXMA MG3650S experienced at least one cartridge that failed immediately or prematurely.

Canon cartridges generally delivered higher or more consisent page yields compared to the tested third-party options. However, there were three Canon original cartridges which were deemed early end-of-life when run through the PIXMA MG3650s, which output fewer pages than rated. On devices like the PIXMA MG2556S and MG3650S, Canon's cartridges offered up to 12% and 14% higher average page yields, respectively, over their competitive averages. While a few third-party brands marginally outpaced Canon's colour yields on specific devices (such as ColorKing and First on the PIXMA TS3550i), these exceptions were inconsistent and often came at the cost of reduced black ink yields or increased variability in output. Notably, Canon's cartridges consistently produced page yields that either met or exceeded expected output rates, providing a more predictable experience for users.

Canon cartridges maintained superior and stable image quality across both tested media types, producing halftone, text, and fine line output that was rated suitable for both internal and customer-facing professional use. For third-party competitors, almost every third-party brand showed significant degradation in halftone quality over the course of testing, with numerous samples rated as unsuitable for external communication. Additionally, Canon demonstrated exceptional colour consistency and large gamut space, offering both vibrant colours and rich black tones with minimal deviation between print runs. Only Canon and a few third-party brands, like TonerKingdom, passed stringent waterfastness and highlighter tests without significant quality loss.

Canon's FINE ink cartridges offer clear advantages over third-party alternatives in reliability, page yield consistency, and professional-grade image quality. While certain third-party brands achieved sporadic successes in isolated categories, Canon's OEM cartridges consistently provided a higher level of performance and user assurance throughout the rigorous testing protocols. For users seeking dependable, high-quality results, Canon FINE cartridges remain the superior choice.

Ink Cartridge Reliability

Canon devices showed 100% reliability with no out of box failures and a small number of low yield premature end of life cartridges. In contrast, the 3rd party products showed reliability issues across each of the four engine groups with at least one cartridge failing out of box and/or delivering less than 60 prints.

PIXMA MG2556S

Each of the Canon cartridges performed up to spec and with no out-of-box failures. On the part of the third-party brands, there were no failures out of the box save for one: Technicians noted one Valuetoner cartridge which was deemed dead on arrival due to a clogged cyan nozzle which would not clear after several rounds of cleaning, rendering the cartridge unusable. Half of the cartridge brands printed through the PIXMA MG2556S saw at least one early end-of-life cartridge throughout testing, outputting yields which were lower than rated.

PIXMA MG3650S

While all of the Canon-branded cartridges showed no failure out of the box, three of the 10 CMY cartridges expired prematurely. Conversely, six of the 10 third-party cartridge brands experienced at least one failure out of the box. For instance, all but three InkYeah CMY cartridges were either dead on arrival or designated early end of life, and all but two of the 10 tested Economink CMY inks fared similarly.

Canon PIXMA TS3550i

The Canon OEM ink cartridges performed well throughout testing, with no failures out of the box, though there was a single CMY cartridge which reached early end of life. Four of the 10 third-party brands, however, experienced at least one dead-on-arrival (DOA) cartridge. All but two Laipeng cartridge either failed out of the box or expired prematurely.

PIXMA TS705a

Most of the cartridge brands performed reliably when run on the PIXMA TS705a, with four brands—LxTek, GPCImage, Smartomi and Supplyguy—having at least one failure out of the box.

Out-of-Box Failures

Canon Pixma MG2556s		Canon Pixma MG3650s	
Cartridge Brand	**Out-of-Box Failures**	**Cartridge Brand**	**Out-of-Box Failures**
Canon	0	Canon	0
anPick	0	Hallolux	3
ColorWorld	0	Salols	0
Keenkle	0	InkYeah	3
LXTek	0	LxTek	0
Lifor	0	Lifor	0
Salols	0	Economink	1
Valuetoner	1	YesInk	0
InkYeah	0	Colorking	2
Hallolux	0	TopInk	1
TonerKingdom	0	Coloretto	2
TOTAL	**1**	**TOTAL**	**12**

Out-of-Box Failures

Canon Pixma TS3550i		Canon Pixma TS705a	
Cartridge Brand	**Out-of-Box Failures**	**Cartridge Brand**	**Out-of-Box Failures**
Canon	0	Canon	0
Lofblat	2	ColorKing	0
Laipeng	3	LxTek	1
LxTek	0	GPCImage	2
ColorKing	1	Starink	0
Colorran	0	LCL	0
Aumok	1	Smartomi	1
Hallolux	0	Hookink	0
First	0	Supplyguy	2
Coloretto	0	Greenjob	0
Economink	0	Kingway	0
TOTAL	**7**	**TOTAL**	**6**

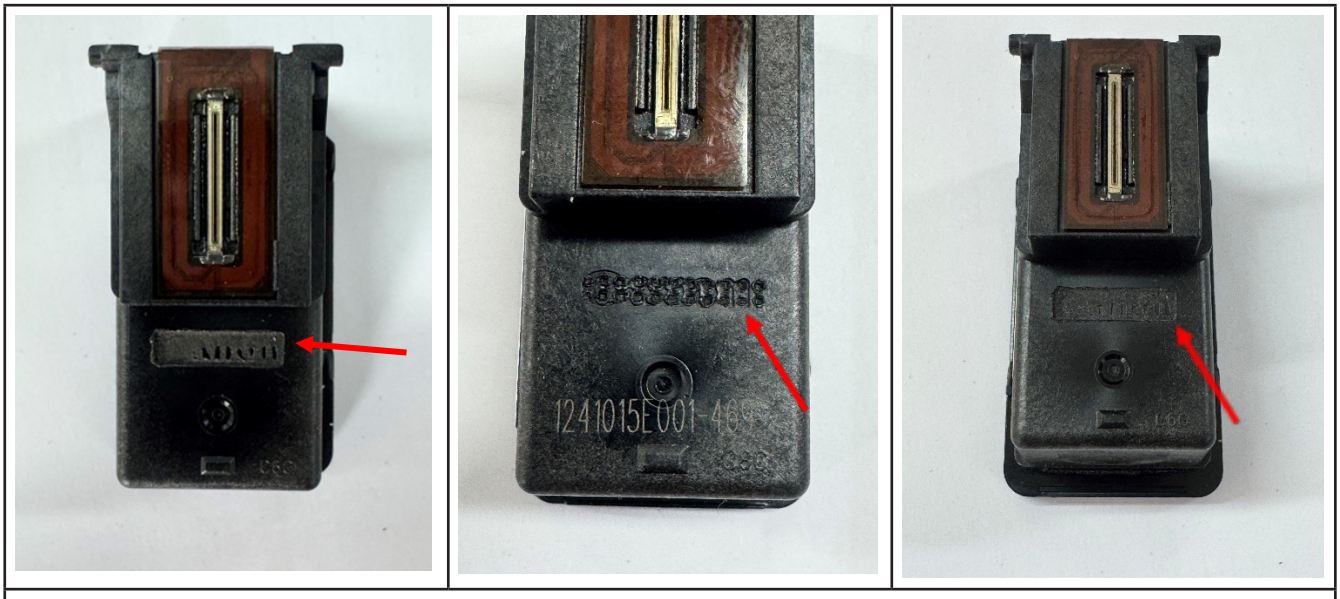
Cartridges classified as "out-of-box" failures are those that either could not be run due to excessive ink leakage, or are broken, or have missing parts, as well as cartridges that produced 10 or fewer acceptable pages in the test. Cartridges classified as "early end of life" are those that produced less than 70% of the rated yield.

Notes & Images of Cartridge Defects

Keypoint Intelligence technicians conducted a visual inspection of several of the aftermarket cartridges which failed either out of the box or prematurely, an evaluation which raised substantial concerns surrounding the reliability of those supplies. Key indicators suggest that some of the units tested may have been either refilled Canon originals or unlicensed clones attempting to replicate OEM form and function without meeting the same quality standards.

For one, several cartridges displayed partially obscured or deliberately scorched branding of what appears to be the Canon logo. These marks appear to have been chemically or thermally treated to erase the original identifier, a practice which is commonly associated with the unauthorized refurbishment of OEM cartridges. Despite these efforts, traces of the Canon brand remain visible in multiple samples.

Images of Scorched Branding



The removal of branding serves both to mislead consumers about the cartridge's origins and to skirt legal implications related to trademark infringement.

Moreover, close examination of the side profiles revealed inconsistent casing finishes from visible adhesive residue to warped or misaligned seams, and even surface scratches consistent with prying open the cartridge casing.

Images of Potentially Resealed Cartridges

Uneven seams and traces of glue/adhesive can be seen along the top of the pictured cartridge, as well as inconsistent plastic fits and scratches.

These visuals suggest that the cartridges may have been manually disassembled, refilled and resealed. Tampering to this degree typically compromises the cartridge's structural integrity, increasing the potential for ink leakage, poor printhead alignment and suboptimal ink flow. This also raises questions about the sterility of the refilling process and whether appropriate quality control protocols were followed, not to mention the overall safety of the ink formula being used.

Lastly, close inspection of the chip areas revealed some cartridges bearing stickers that read "DO NOT REMOVE THIS CHIP." This can be an indication that the chip itself may be an aftermarket replacement rather than a genuine Canon chip. These chips attempt to bypass printer authentication protocols and ink level tracking, but often fail to reset properly or work intermittently across different firmware versions. This discovery by technicians may well be correlated to the higher rate of failure from third-party supplies versus Canon originals, failures which include premature "ink out" alerts (even when substantial ink remains). In fact, emerging analysis indicates that many of these cartridges have likely exceeded their intended lifecycle, which prompts various mechanical concerns for the printer, such as degraded printheads, overly saturated inkpads, and/or a mismatch between the ink composition and the original printhead design, leading to reduced print quality or nozzle damage.

Images of Cartridge Chips

: The warning labels serve as a deterrent to chip inspection and also suggest that removal may expose proprietary violations or poorly engineered contact points.

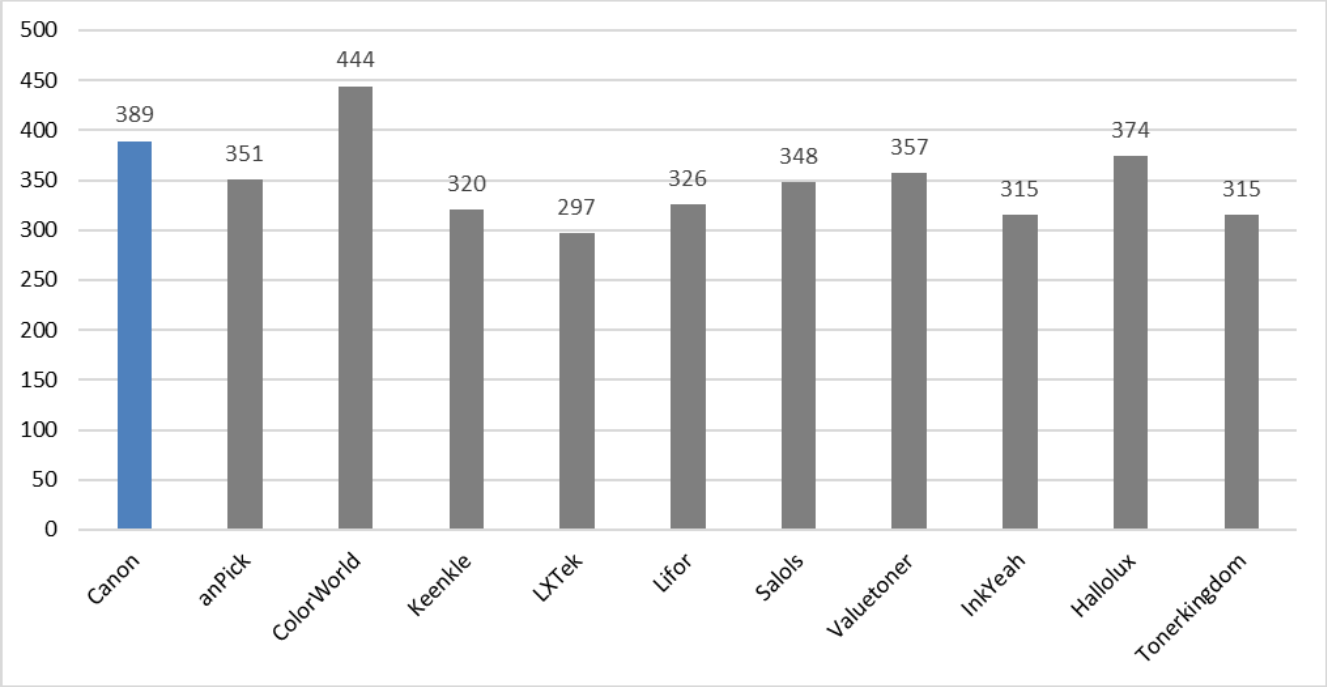
Page Yield

Keypoint Intelligence conducted its page yield tests using the ISO 24712 test targets and each cartridge brand was used on a dedicated, brand-new device until 10 cartridge sets had been exhausted.

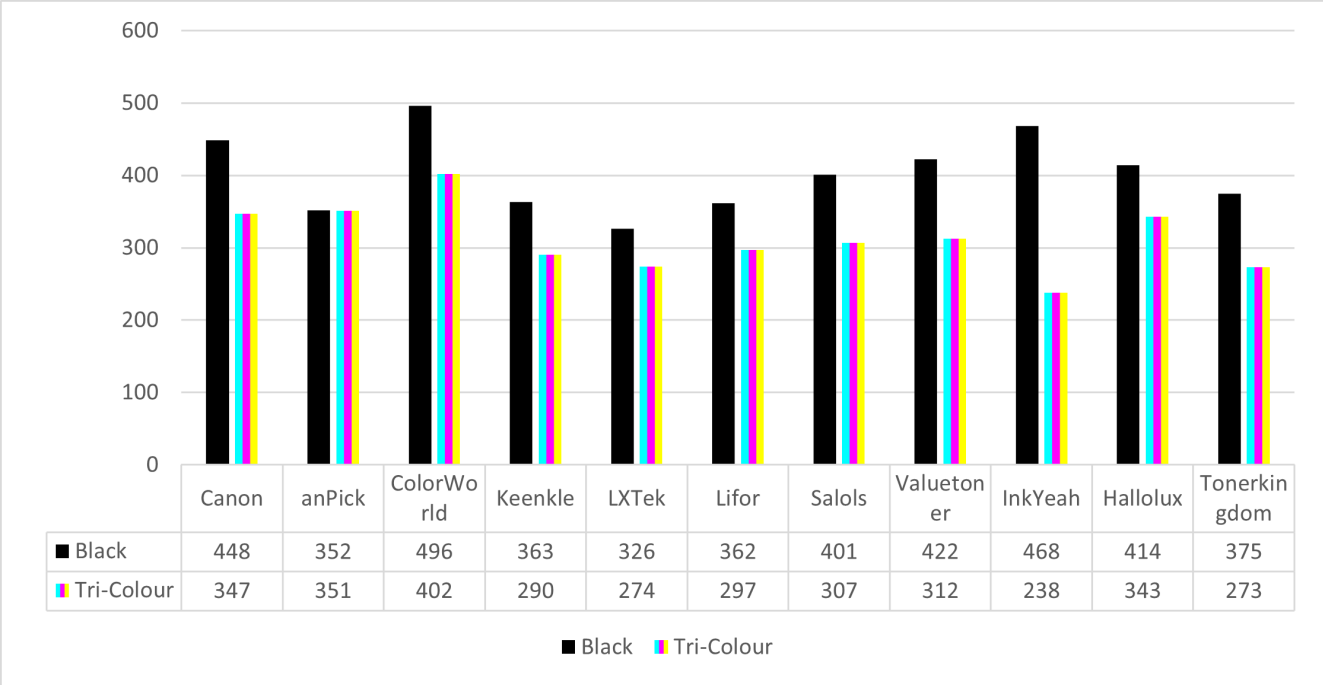
Canon PIXMA MG2556S

When tested on the Canon PIXMA MG2556S, the Canon OEM ink cartridges produced higher average yields than most of the third-party ink cartridges, save for ColorWorld. Indeed, the Canon OEM's average yield was about 12% higher than the average OEM yield; 11% higher from CMY cartridges and 13% higher from black cartridges.

Average Tested Yields by Brand (Canon PIXMA MG2556S)



Average Tested Yields by Brand (Canon PIXMA MG2556S)



	Canon	anPick	ColorWorld	Keenkle	LXTek	Lifor	Salols	Valueteon er	InkYeah	Hallolux	Tonerkingdom
Black	448	352	496	363	326	362	401	422	468	414	375
Tri-Colour	347	351	402	290	274	297	307	312	238	343	273

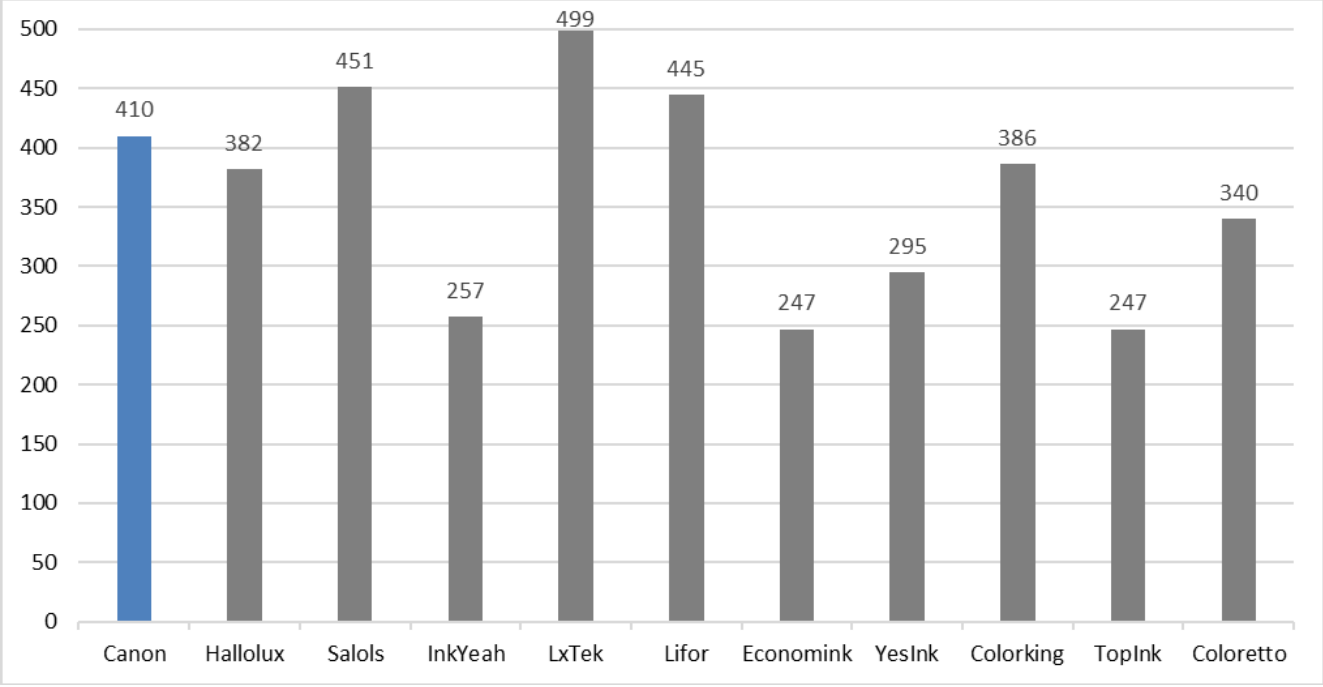
Percentage By Which Canon's Average Tested Yields Are Higher (Canon PIXMA MG2556S)

	CMY	Black	CMYK
anPick	-1%	27%	11%
ColorWorld	-14%	-10%	-12%
Keenkle	20%	23%	22%
LXTek	27%	37%	31%
Lifor	17%	24%	19%
Salols	13%	12%	12%
Valuetoner	11%	6%	9%
InkYeah	46%	-4%	23%
Hallolux	1%	8%	4%
TonerKingdom	27%	19%	23%

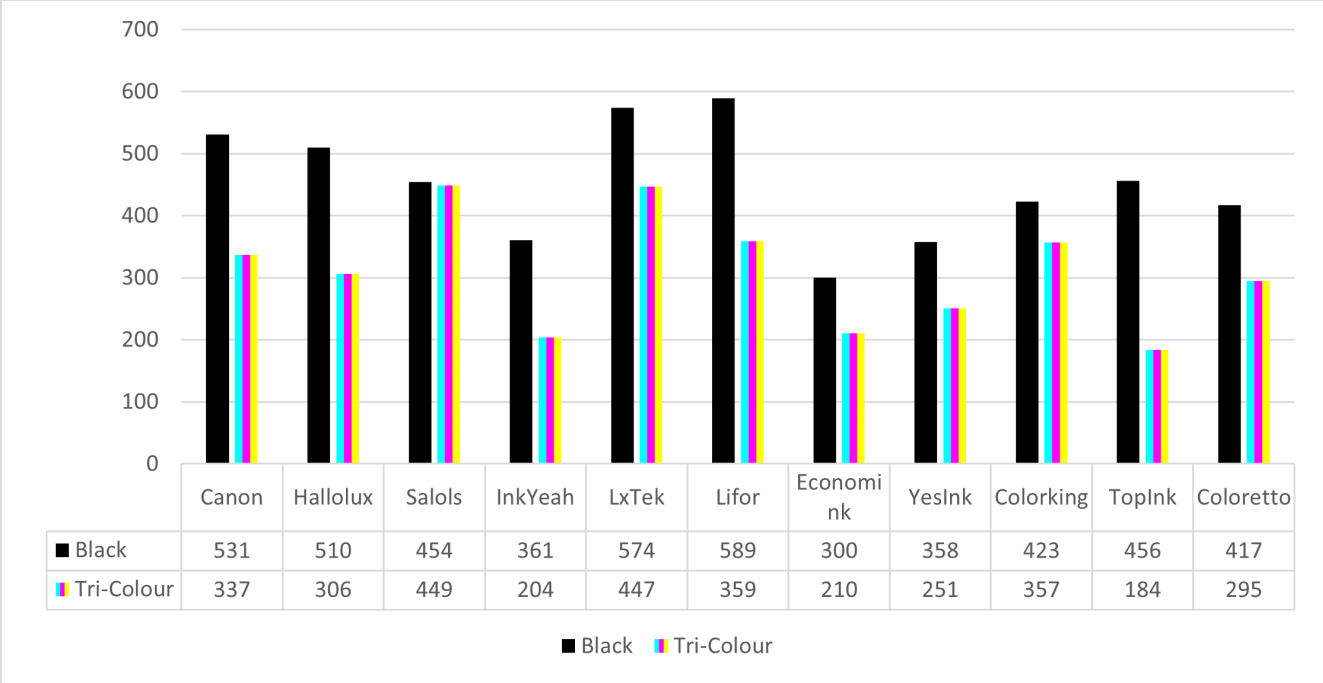
Canon PIXMA MG3650s

When tested on the Canon PIXMA MG3650S, the Canon OEM ink cartridges produced higher average yields across seven of the 10 third-party brands, apart from Salols, LxTek, and Lifor. The OEM cartridges' average CMY yield was 10% higher than the competitive average, while the OEM average black yield was 20% higher. The average OEM CMYK yield was 14% higher than the average of the alternative brands.

Average Tested Yields by Brand (Canon PIXMA MG3650S)



Average Tested Yields by Brand & Colour (Canon PIXMA MG3650S)



	Canon	Hallolux	Salols	InkYeah	LxTek	Lifor	Economink	YesInk	Colorking	TopInk	Coloretto
Black	531	510	454	361	574	589	300	358	423	456	417
Tri-Colour	337	306	449	204	447	359	210	251	357	184	295

Percentage By Which Canon's Average Tested Yields Are Higher (Canon PIXMA MG3650S)

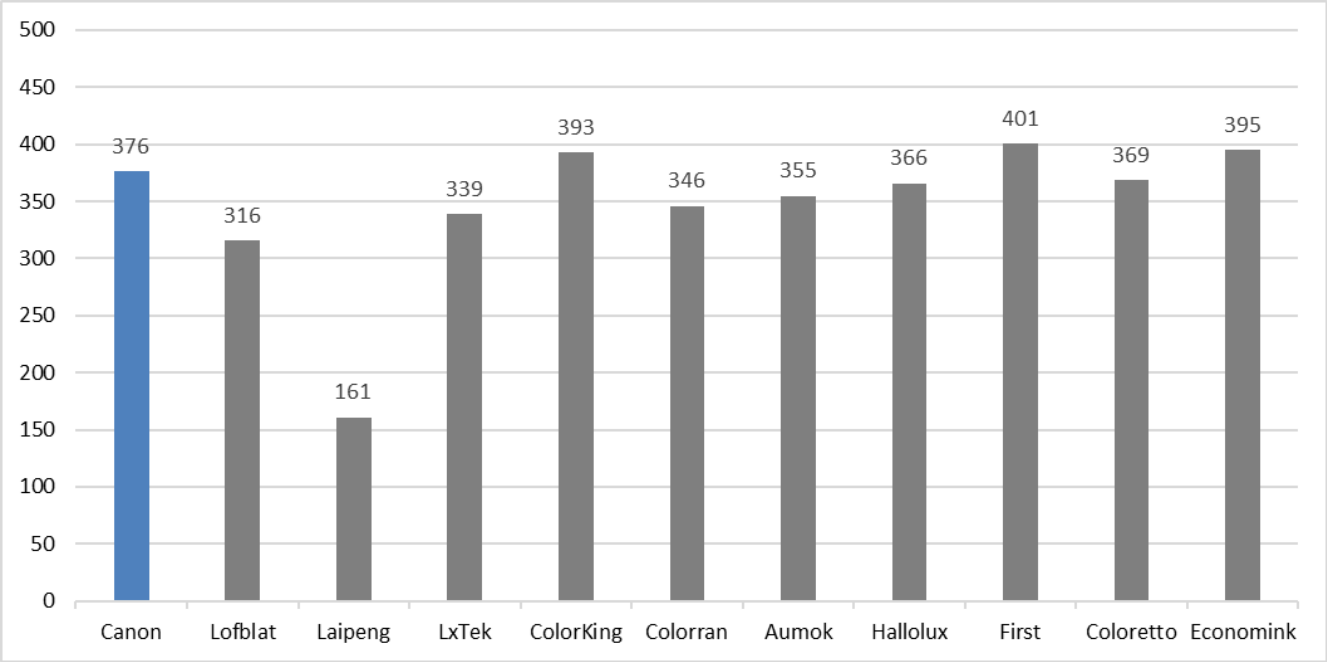
Cartridge Brand	CMY	Black	CMYK
Hallolux	10%	4%	7%
Salols	-25%	17%	-9%
InkYeah	65%	47%	60%
LxTek	-25%	-7%	-18%
Lifor	-6%	-10%	-8%
Economink	60%	77%	66%
YesInk	34%	48%	39%
Colorking	-6%	26%	6%
TopInk	83%	16%	66%
Coloretto	14%	27%	21%

This table shows the percentage by which the tested yield of the Canon OEM ink was higher than each of its rivals for average CMY, Black and CMYK yields.

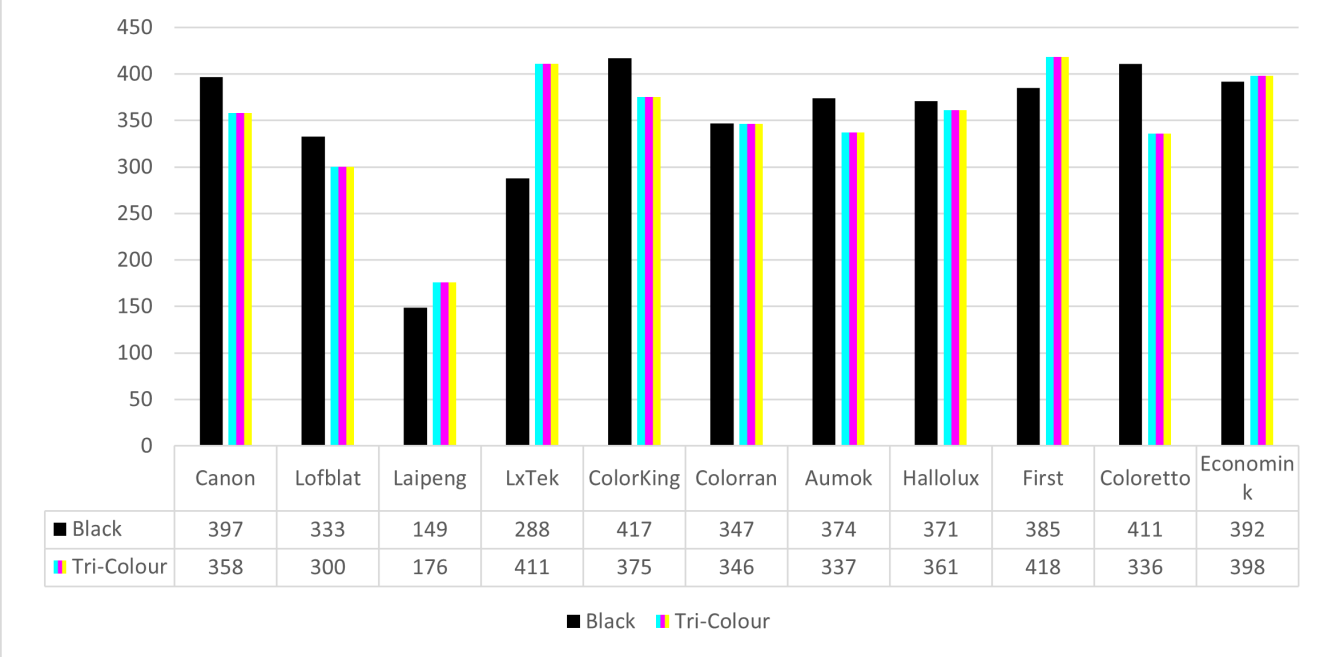
Canon PIXMA TS3550i

The Canon OEM ink delivered the fourth-highest average CMY yield behind ColorKing, First, and Economink's average yields. The Laipeng-branded cartridges were the worst performer, producing average CMY and CMYK yields that were 103% and 134% lower than the Canon OEM ink's average tested yields.

Average Tested Yields by Brand (Canon PIXMA TS3550i)



Average Tested Yields by Brand & Colour (Canon PIXMA TS3550i)



	Canon	Lofblat	Laipeng	LxTek	ColorKing	Colorran	Aumok	Hallolux	First	Coloretto	Economink
Black	397	333	149	288	417	347	374	371	385	411	392
Tri-Colour	358	300	176	411	375	346	337	361	418	336	398

Percentage By Which Canon's Average Tested Yields Are Higher (Canon PIXMA MG3550i)

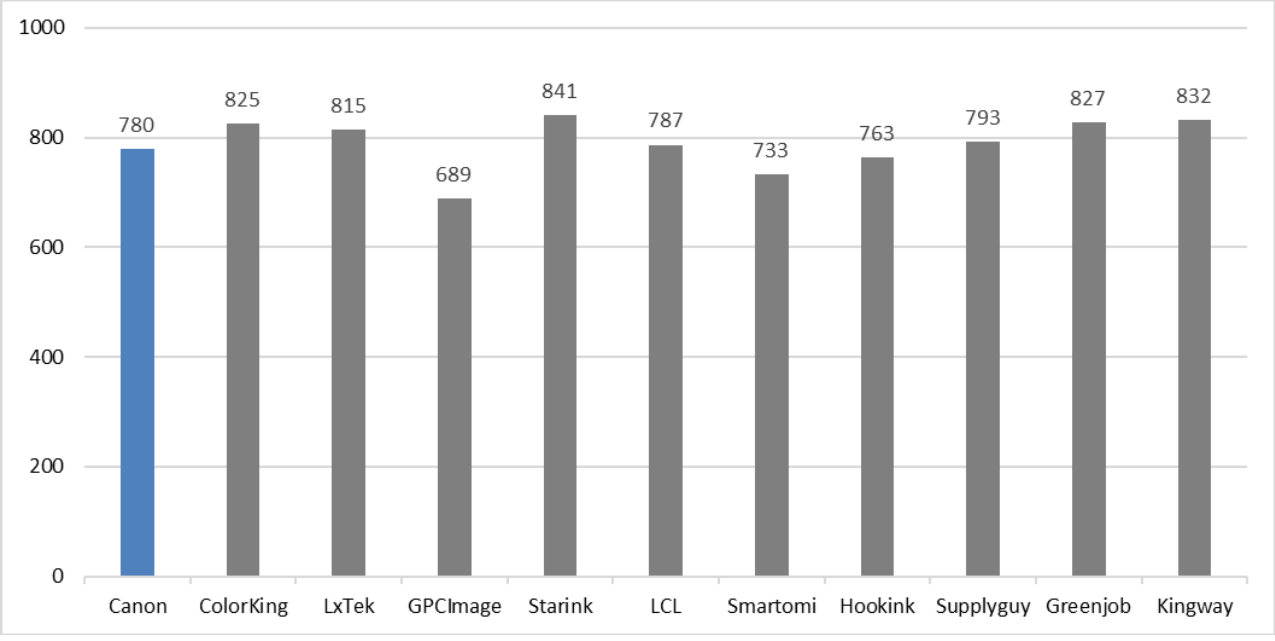
Cartridge Brand	CMY	Black	CMYK
Lofblat	19%	19%	19%
Laipeng	103%	166%	134%
LxTek	-13%	38%	11%
ColorKing	-5%	-5%	-4%
Colorran	3%	14%	9%
Aumok	6%	6%	6%
Hallolux	-1%	7%	3%
First	-14%	3%	-6%
Coloretto	7%	-3%	2%
Economink	-10%	1%	-5%

This table shows the percentage by which the tested average yields of the third-party inks differed to that of the Canon OEM ink.

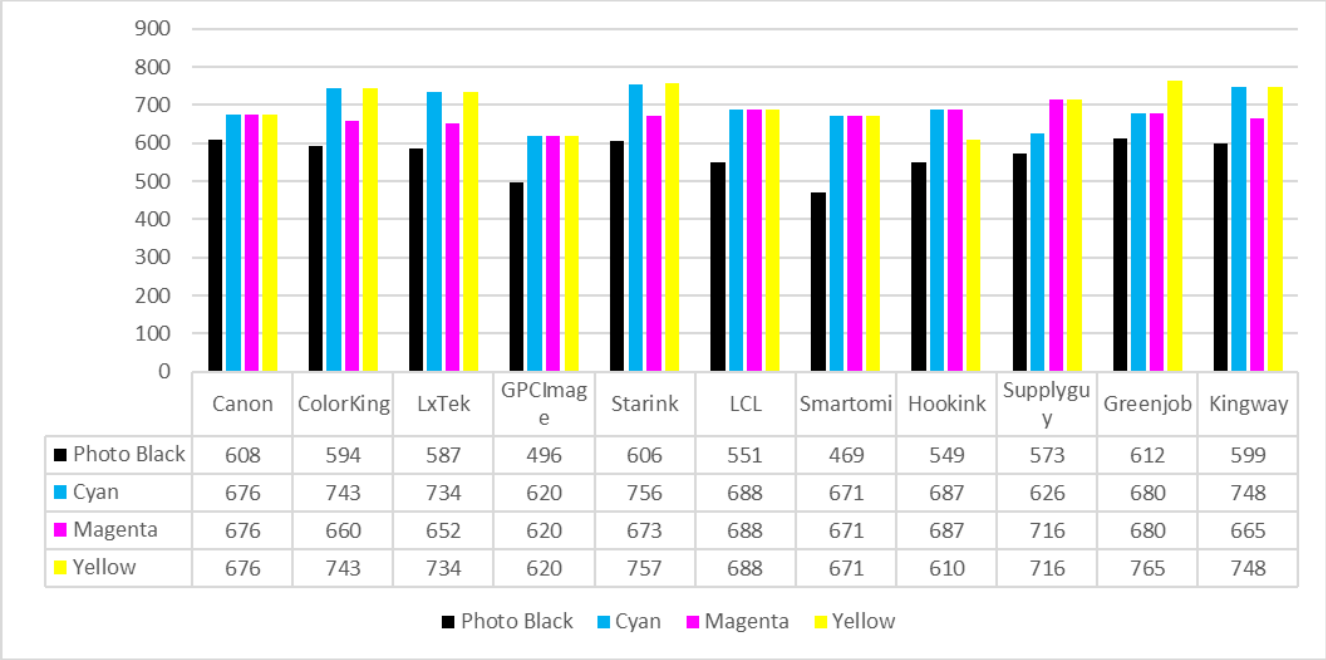
Canon PIXMA TS705a

The Canon OEM ink delivered average yields which were higher than three of the 10 competing brands (GPCImage, Smartomi, and Hookink, with the lowest performing third-party cartridge brand being GPCImage. Average yields from Canon OEM cartridges were higher than the competitors in terms of photo black yield (7% more pages), though average CMY and pigment black yields were 2% and 37% greater from the third-party brands, respectively.

Average Tested Yields by Brand (Canon PIXMA TS705a)



Average Tested Yields by Brand & Colour (Canon PIXMA TS705a)



	Canon	ColorKing	LxTek	GPCImage	Starink	LCL	Smartomi	Hookink	Supplyguy	Greenjob	Kingway
Photo Black	608	594	587	496	606	551	469	549	573	612	599
Cyan	676	743	734	620	756	688	671	687	626	680	748
Magenta	676	660	652	620	673	688	671	687	716	680	665
Yellow	676	743	734	620	757	688	671	610	716	765	748

Percentage By Which Canon's Average Tested Yields Are Higher (Canon PIXMA TS705a)

Brand	CMY	CMYK	Photo Black	Pigment Black
ColorKing	-5%	-5%	-12%	-49%
LxTek	-4%	-4%	4%	-48%
GPCImage	70%	13%	23%	23%
Starink	-7%	-7%	0%	-50%
LCL	-2%	-1%	10%	-45%
Smartomi	1%	6%	30%	-35%
Hookink	-1%	2%	11%	-45%
Supplyguy	-1%	-2%	6%	-47%
Greenjob	-4%	-6%	-1%	-50%
Kingway	-6%	-6%	2%	-49%

Image quality

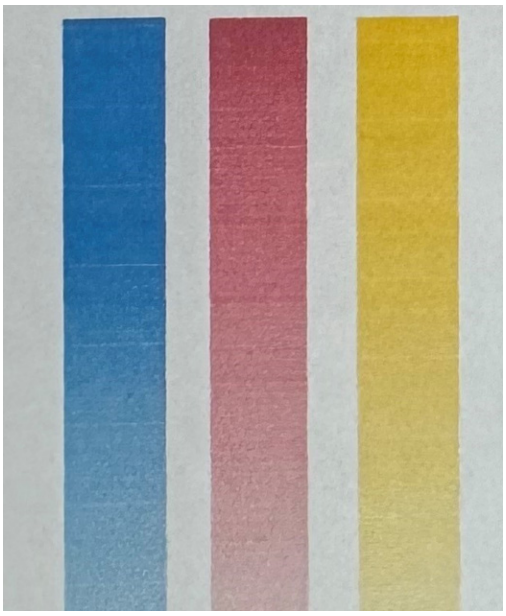
Keypoint Intelligence assessed the image quality of the ink cartridge brands tested using its own proprietary image quality test targets. Keypoint Intelligence's technicians printed the test targets at 500-impression intervals. Image quality is assessed on halftones, text and fines and photographic output. The results were then compared and graded from 1 (severe defect) to 3 (good). Examples showing things that are indicative of the difference in quality between the various grades are shown below.

Examples of Image Quality Defects

amTeck – 260 gsm (PIXMA MG2556s)

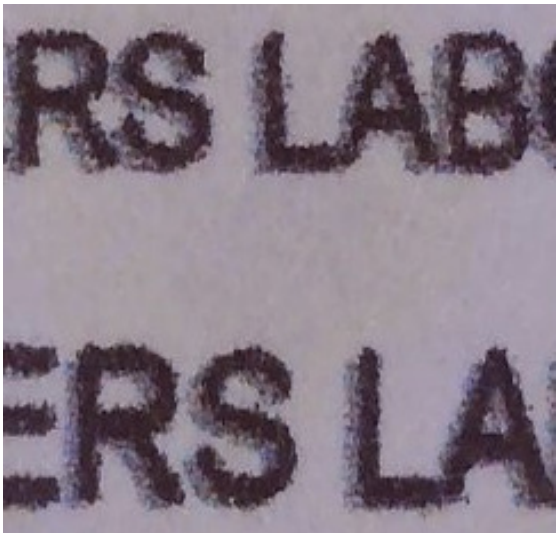
Visible vertical banding artifacts, which are faint, but consistent vertical lines run throughout the entire image.

amTECK - 80 gsm (PIXMA MG2556s)



Horizontal banding in gradients, uneven fill in solids

amTeck - 80 gsm (PIXMA MG2556s)

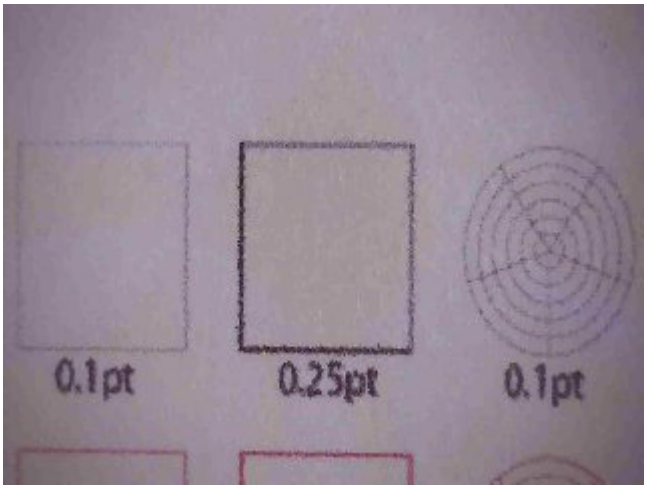


Text degradation seen here—including feathering, ink bleed, and dot gain

Hallolux - 260 gsm (PIXMA MG3650S)

Magenta colour casts, loss of shadow detail, and unnatural rendering of darker complexions.

Hallolux – 80 gsm (PIXMA MG3650S)



Jagged edges, partial line dropout, and poor definition of 0.1 pt and 0.25 pt lines

TopInk – 260 gsm (PIXMA MG3650S)

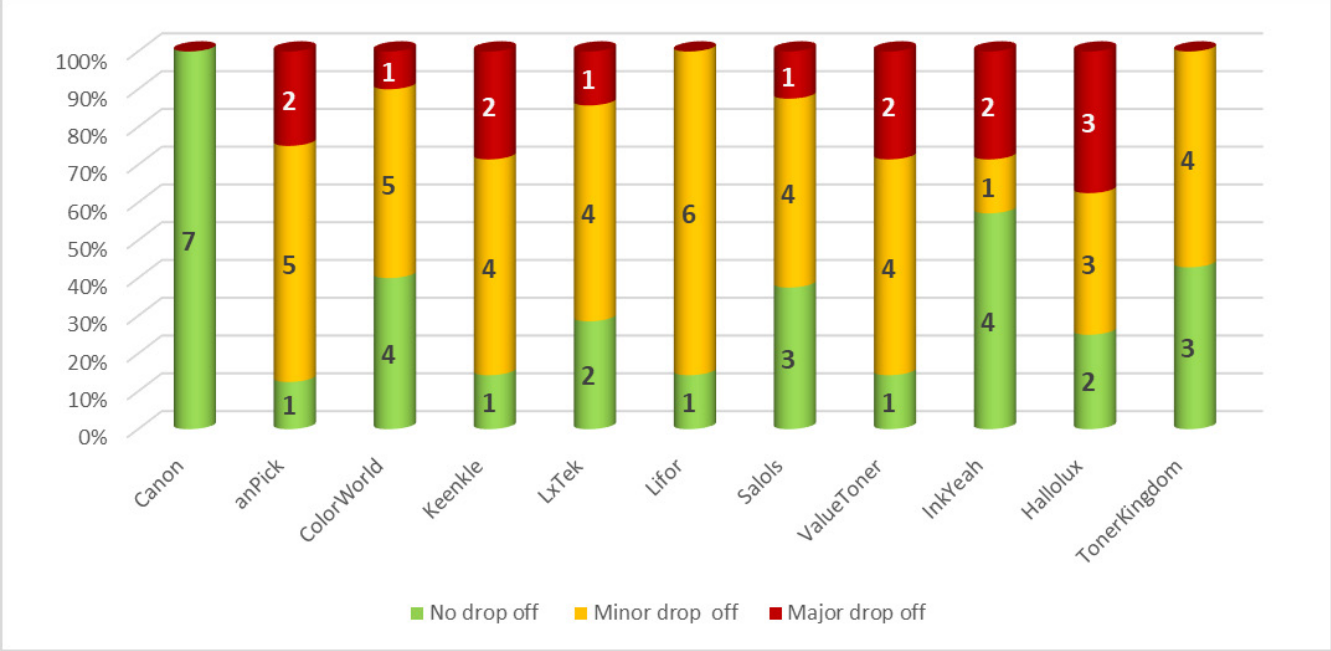
Crushed blacks, loss of shadow detail and magenta cast throughout the image

Canon PIXMA MG2556s (80 gsm)

Halftones

Each of the samples evaluated from the Canon OEM cartridges produced halftones which were suitable for use inside or outside of an organization, with each sample receiving the highest marks for quality. Meanwhile, at least one sample from each of the other third-party brand produced some degree of halftone quality degradation as the test continued. In fact, majority of the third-party brands produced at least one sample with poor halftone quality with major drop off. The only two third-party brands which did not produce halftone quality with major defects were TonerKingdom and Lifor.

Halftone Results

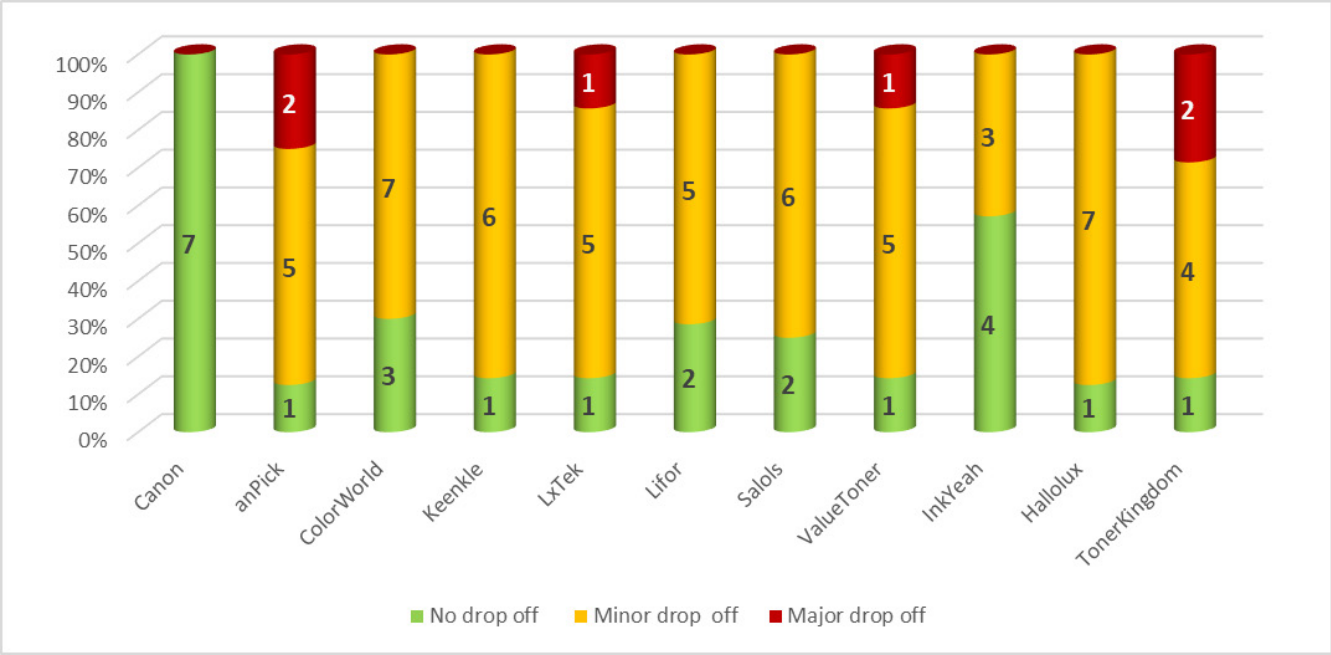


This table shows the percentage by which the tested average yields of the third-party inks differed to that of the Canon OEM ink.

Text and Fine Lines

The quality of text and fine lines from samples produced by Canon cartridges was good across each of the seven samples assessed. However, samples from each of the third-party brands exhibited some sort of quality drop off, though with fewer instances of major drop off compared to halftone performance. Four third-party brands (anPick, LxTek, ValueToner, and TonerKingdom) produced at least one sample with major drop off in text/fine line quality and was deemed unusable for external use. The remaining third-party brands all produced more samples with minor defects than samples deemed good.

Text and Fine Lines Results

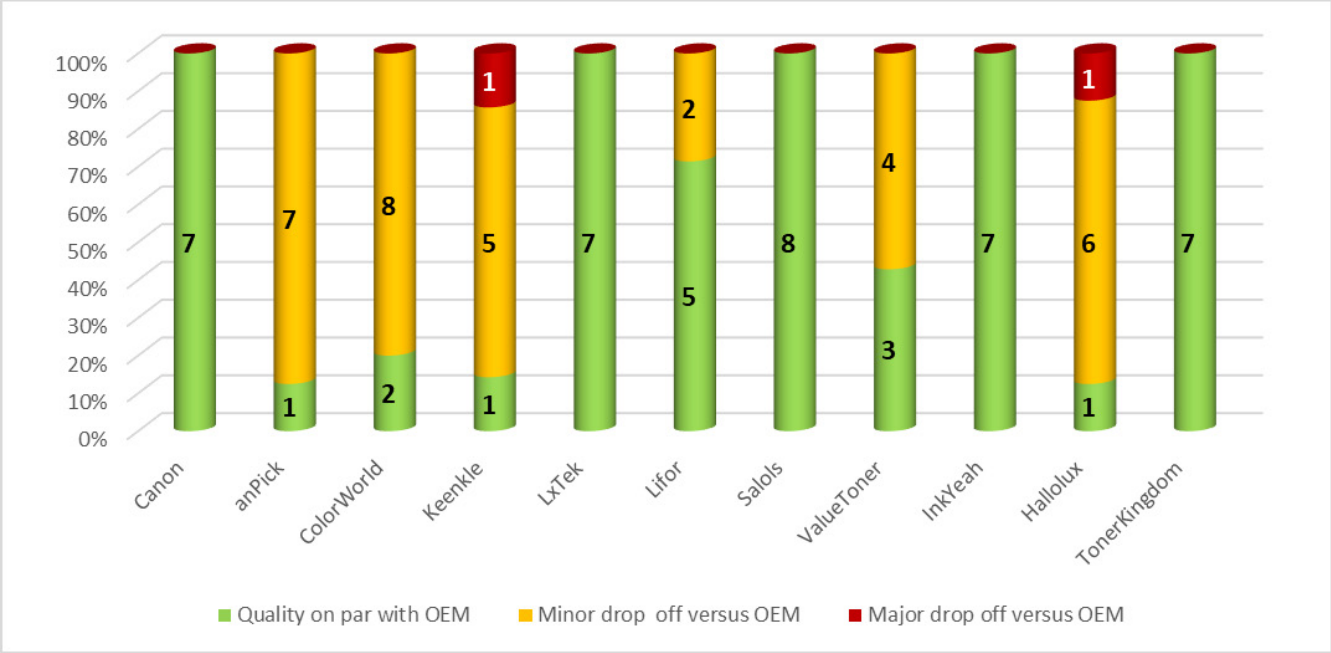


This graph also shows the number of image quality samples of each grade by brand.

Wicking Test

Wicking can cause output to look sub-par and text to be messy or even illegible. It manifests itself as thin streaks of ink that emanate from the intended print location, perhaps as a line emanating from a text character. In Keypoint Intelligence's testing, none of the samples assess from Canon cartridges—along with samples produced by LxTek, Salols, InkYeah and TonerKingdom—experienced quality degradation from wicking. However, the remaining six third-party brands produced more samples with evident defects from wicking. Specifically, Keenkle and Hallolux cartridges produced a sample each which was deemed unusable for external use with major drop off in quality.

Wicking Results

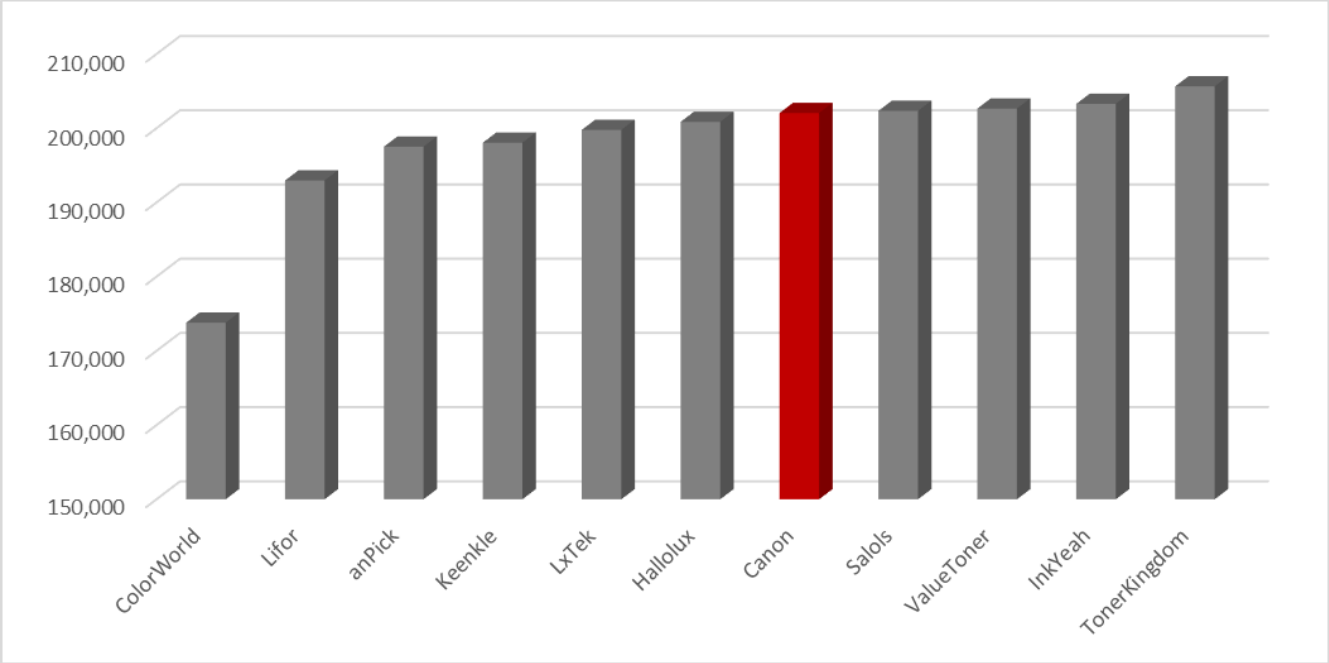


This graph also shows the number of image quality samples of each grade by brand.

Colour Gamut

Overall gamut volumes were comparable among most brands, but ColorWorld cartridges produced the lowest average colour gamut volume across each brand. More importantly, standard deviation of gamut readings from Canon OEM cartridges was the lowest compared to that of other brands, indicating that the Canon OEM ink's colour gamut volumes were more consistent over time.

Average Gamut Volume by Brand



Waterfastness Test

Printed output can sometimes encounter moisture, which can have an adverse effect on output quality. To test the impact of moisture on copy, Keypoint Intelligence lab technicians deposited a measured quantity of water on output printed with each ink cartridge brand and allowed it to dry. A sample deemed unsuitable for use both outside and inside of a company would be rated 1 and coloured red, for example.

Canon OEM samples and those from the other tested brands showed no significant signs of running ink or smearing which influenced the integrity of image quality. However, only four brands showed no defects from waterfastness testing: Keenkle, Salols, ValueToner, and TonerKingdom. The remaining brands were all considered to exhibit minor drop off in quality.

Waterfastness Results

	Drip 1	Drip 2
Canon	2	2
anPick	2	2
ColorWorld	2	2
Keenkle	3	3
LxTek	2	2
Lifor	2	2
Salols	3	3
ValueToner	3	3
InkYeah	2	2
Hallolux	2	2
TonerKingdom	3	3

Quality of the image sample denoted by a colour and number. A sample deemed unsuitable for use both outside and inside of a company would be coloured red and labelled with the number 1, for example.

Highlighter Test

Highlighting printed output is a common practice, so it's important that the act of highlighting the printed areas of a document doesn't cause the print to smudge and make print illegible. After printing, a section of the page is highlighted with both an acid-based and alkaline-based highlighter after drying for two minutes before being assessed. From testing, each of the tested brands showed no drop off in quality from the alkaline highlighter. As for the acid-based highlighter, Keenkle, LXTek, and Hallolux output was drop-off-free while the others experienced only minor drop off, including output from Canon cartridges.

Highlighter Test Results

	Acid	Alkaline
Canon	2	3
anPick	2	3
ColorWorld	2	3
Keenkle	3	3
LxTek	3	3
Lifor	2	3
Salols	2	3
ValueToner	2	3
InkYeah	2	3
Hallolux	3	3
TonerKingdom	2	3

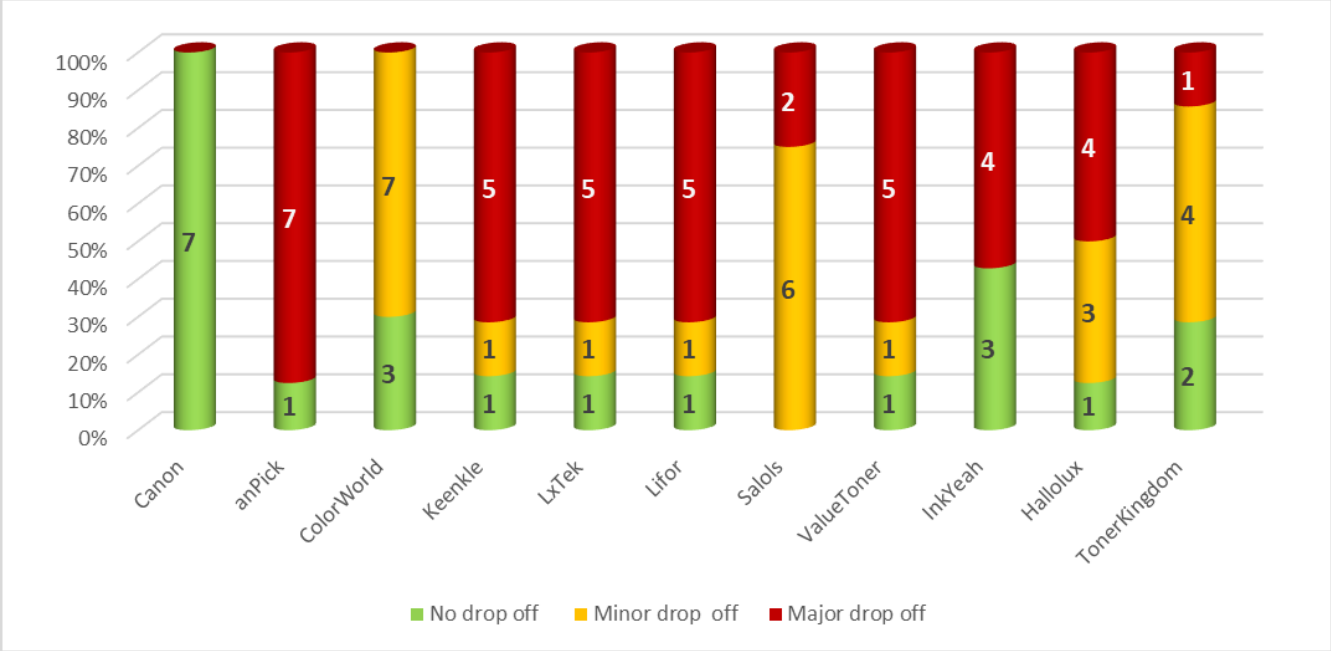
Quality of the image sample denoted by a colour and number. A sample deemed unsuitable for use both outside and inside of a company would be coloured red and labelled with the number 1, for example.

Canon PIXMA MG2556s (260 gsm)

Halftones

In terms of halftone quality, all of the samples printed with the Canon OEM ink was considered good to use inside and outside of an organization, while every other third-party brand produced several samples which showed major defects in quality except ColorWorld. Nearly every sample from anPick cartridges exhibited major drop off in quality (7 of 8 samples), with Keenkle, LxTek, Lifor, and Valuetoner cartridges showing five samples each with major drop off.

Halftone Results

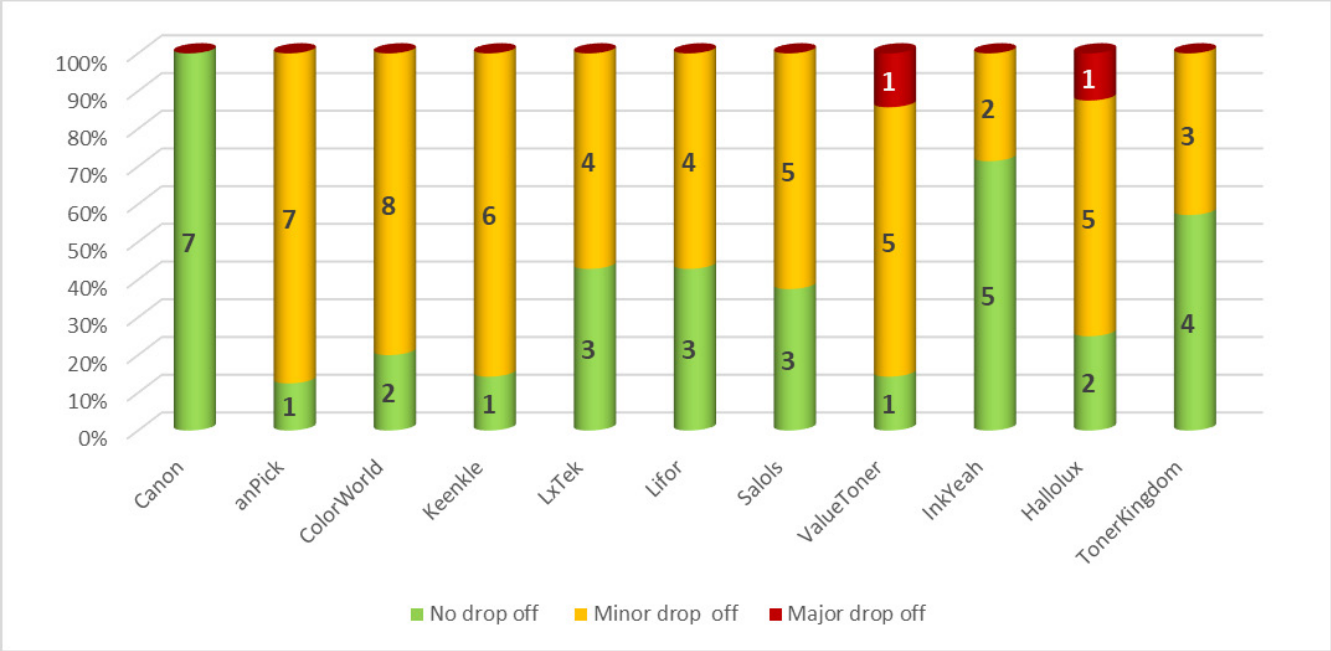


This graph also shows the number of image quality samples of each grade by brand.

Text and Fine Lines

The quality of text and fine lines exhibited from Canon OEM cartridges was considered good all around. All but two third-party brands (ValueToner and Hallolux) produced samples with minor drop off in text and line quality, both of which produced one sample each with minor defects. Each of the third-party brands except InkYeah and TonerKingdom produced more samples with minor text and line defects than those which were deemed good.

Text and Fine Lines Results

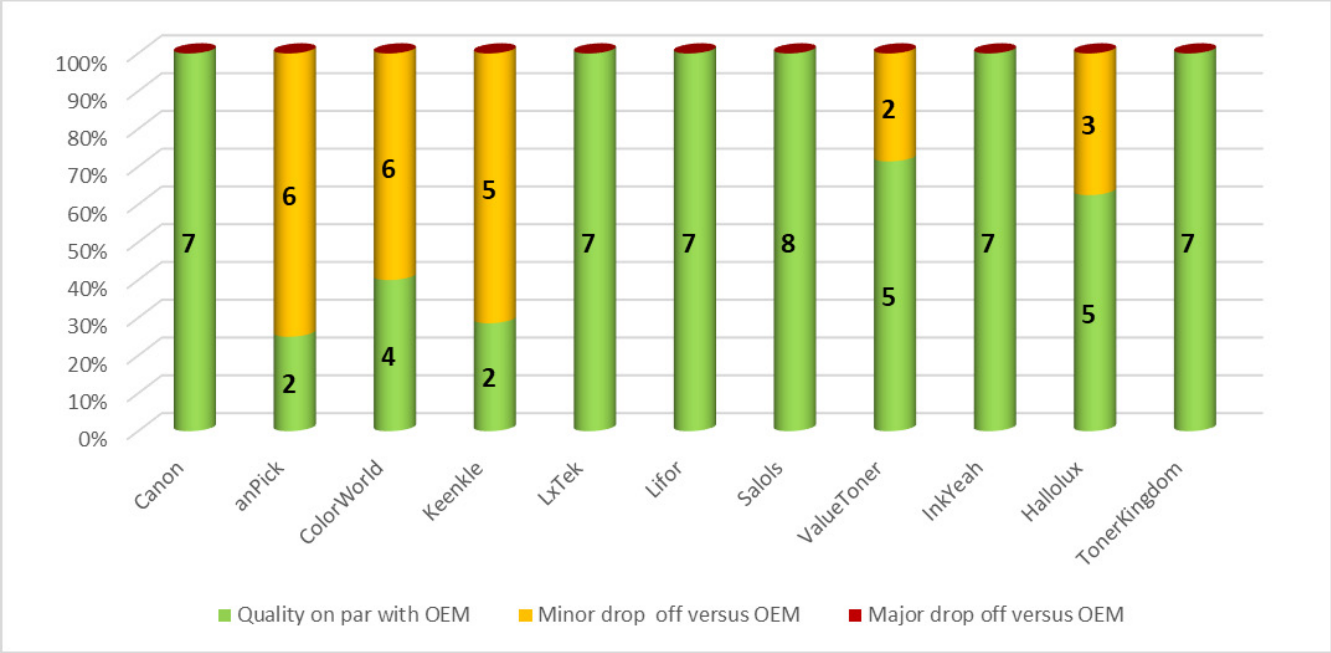


This graph also shows the number of image quality samples of each grade by brand.

Wicking Test

In Keypoint Intelligences testing, none of the brands tested showed significant signs of quality degradation from wicking, with each sample from Canon, LxTek, Lifor, Salols, InkYeah, and TonerKingdom cartridges receiving the highest marks. anPick, ColorWorld, Keenkle, ValueToner, and Hallolux cartridges produced anywhere from two to six samples with minor quality drop off due to wicking.

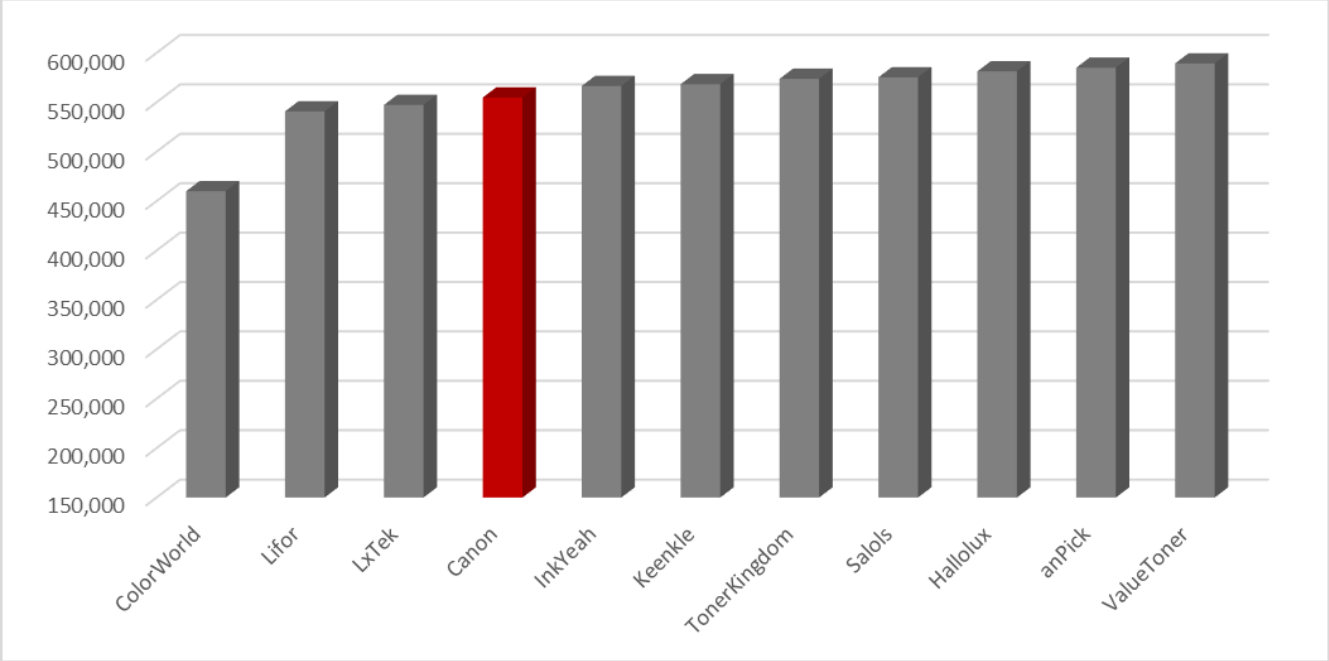
Wicking Results



Colour Gamut

When tested using 260 gsm media, the Canon OEM average gamut volume was the fourth lowest, but maintained the second most consistent gamut readings across the other tested brands behind InkYeah cartridges.

Average Gamut Volume by Brand



Waterfastness Test

When tested using 260 gsm media, all of the brands passed waterfastness testing. Lifor and Hallolux samples showed minor drop off in both drip tests, while ColorWorld samples showed minor defects from Drip 1.

Waterfastness Results

	Drip 1	Drip 2
Canon	3	3
anPick	3	3
ColorWorld	2	3
Keenkle	3	3
LxTek	3	3
Lifor	2	2
Salols	3	3
ValueToner	3	3
InkYeah	3	3
Hallolux	2	2
TonerKingdom	3	3

Quality of the image sample denoted by a colour and number. A sample deemed unsuitable for use both outside and inside of a company would be coloured red and labelled with the number 1, for example.

Highlighter Test

Image quality samples from all of the ink cartridge brands passed highlighter testing, with Canon, ValueToner, and InkYeah supplies showing minor drop off in quality from the acid highlighter evaluation.

Highlighter Test Results

	Acid	Alkaline
Canon	2	3
anPick	3	3
ColorWorld	3	3
Keenkle	3	3
LxTek	3	3
Lifor	3	3
Salols	3	3
ValueToner	2	3
InkYeah	2	3
Hallolux	3	3
TonerKingdom	3	3

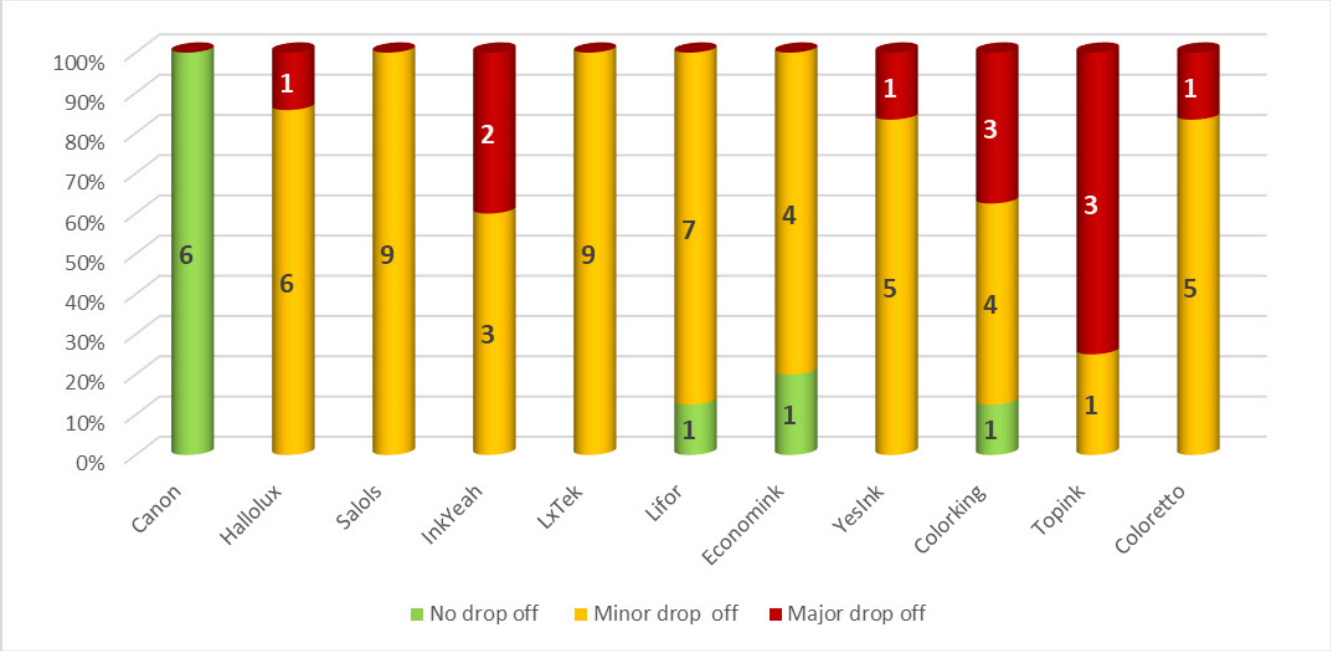
Quality of the image sample denoted by a colour and number. A sample deemed unsuitable for use both outside and inside of a company would be coloured red and labelled with the number 1, for example.

Canon PIXMA MG3650S (80 gsm)

Halftones

All of the six halftone samples printed with the Canon OEM ink were considered good for use inside and outside of an organization. Only three third-party brands (Lifor, Econimink, and ColorKing) produced a sample each where the quality saw no drop off in halftones. Otherwise, each brand exhibited some level of defect across samples assessed. Each of the samples produced by LxTek and Salols supplies exhibited minor drop off in halftone quality, with 75% of Topink samples showing major drop off.

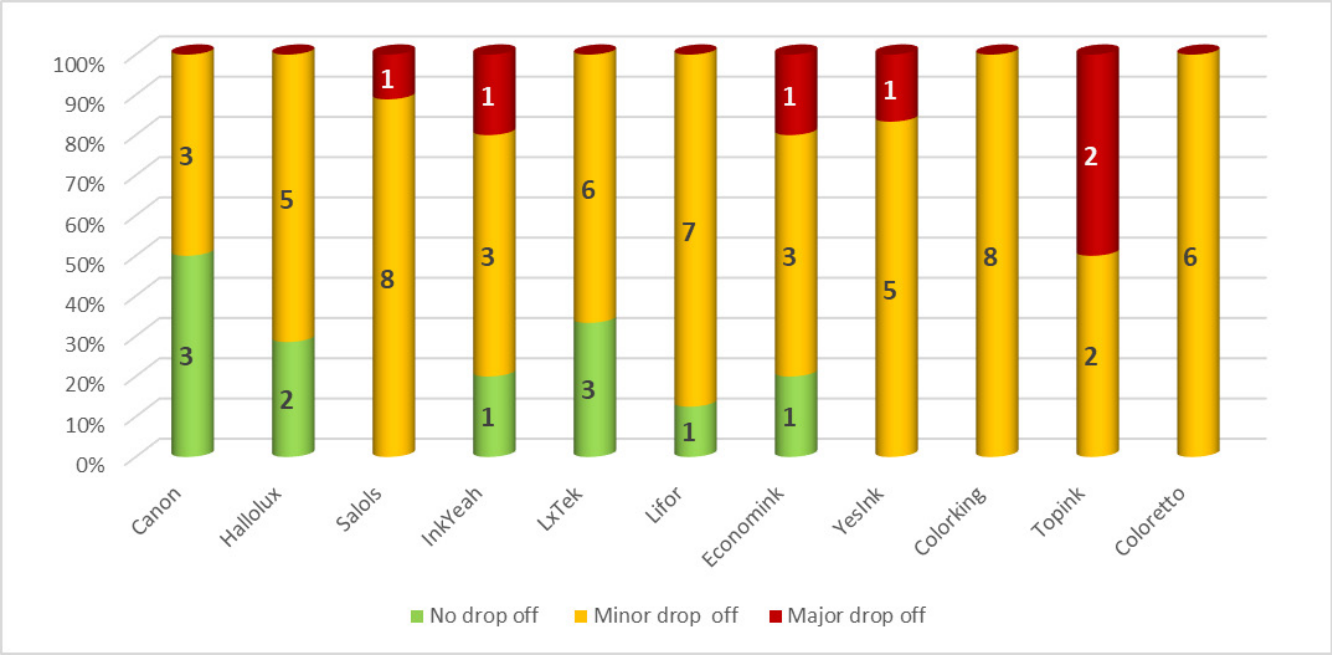
Halftone Results



Text and Fine Lines

The quality of text and fine lines of samples from Canon cartridges was generally good, with three of six samples exhibiting minor drop off in quality. Four of the 10 competing brands (Salols, InkYeah, Economink, and YesInk) each produced one sample with unusable text and line quality, with Topink producing two samples with major drop off. Some brands did not receive the highest marks on any samples produced including Salols, YesInk, ColorKing, Topink, and Coloretto, each producing several samples with some form of defects.

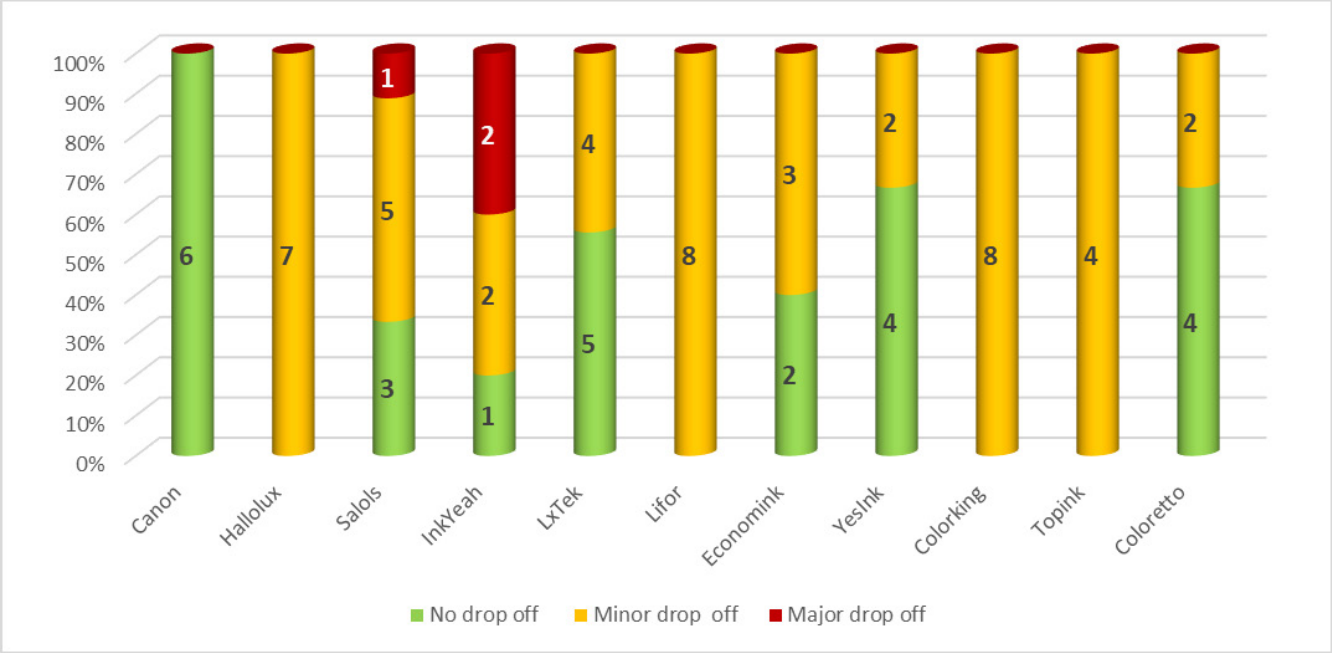
Text and Fine Lines Results



Wicking Test

In Keypoint Intelligence's testing, both Salols and InkYeah cartridges produced one and two samples respectively where wicking caused major drop off in quality. While brands like LxTek, YesInk, and Coloretto each produced a majority of samples which were good, all samples from Hallolux, ColorKing, and Topink supplies were shown to have minor drop off as a result of wicking.

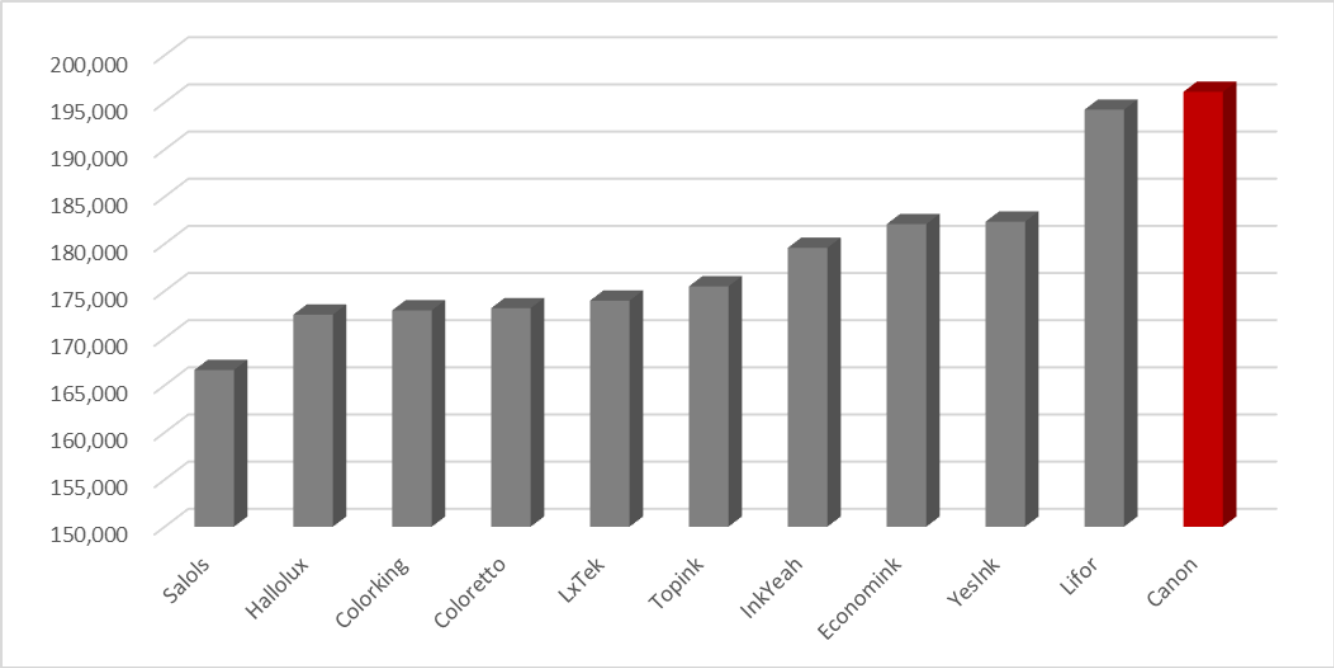
Wicking Results



Colour Gamut

The Canon OEM brand's average colour gamut volume was the highest among the tested brands, with the lowest average gamut volume produced by Salols supplies. The Canon gamut variance was also the smallest in comparison to the competitors, meaning a more consistent performance across each samples assessed

Average Gamut Volume by Brand



Waterfastness Test

To test the impact of moisture on copy, Keypoint Intelligence lab technicians deposited a measured quantity of water on output printed with each ink cartridge brand and allowed it to dry.

Each brand passed waterfastness testing save for Topink, which was considered unusable after both drop tests. Hallolux, Salols, Lifor, and ColorKing cartridges saw no defects from waterfastness testing.

Waterfastness Results

	Drip 1	Drip 2
Canon	2	2
Hallolux	3	3
Salols	3	3
InkYeah	2	2
LxTek	2	2
Lifor	3	3
Economink	2	2
YesInk	2	2
Colorking	3	3
Topink	1	1
Coloretto	2	2

Quality of the image sample denoted by a colour and number. A sample deemed unsuitable for use both outside and inside of a company would be coloured red and labelled with the number 1, for example.

Highlighter Test

Image quality samples from all of the ink cartridge brands tested passed highlighter testing, especially in the alkaline test. As for the acid test, Hallolux, Economink, and YesInk samples all exhibited no drop off of any kind.

Highlighter Test Results

	Acid	Alkaline
Canon	2	3
Hallolux	3	3
Salols	2	3
InkYeah	2	3
LxTek	2	3
Lifor	2	3
Economink	3	3
YesInk	3	3
Colorking	2	3
Topink	2	3
Coloretto	2	3

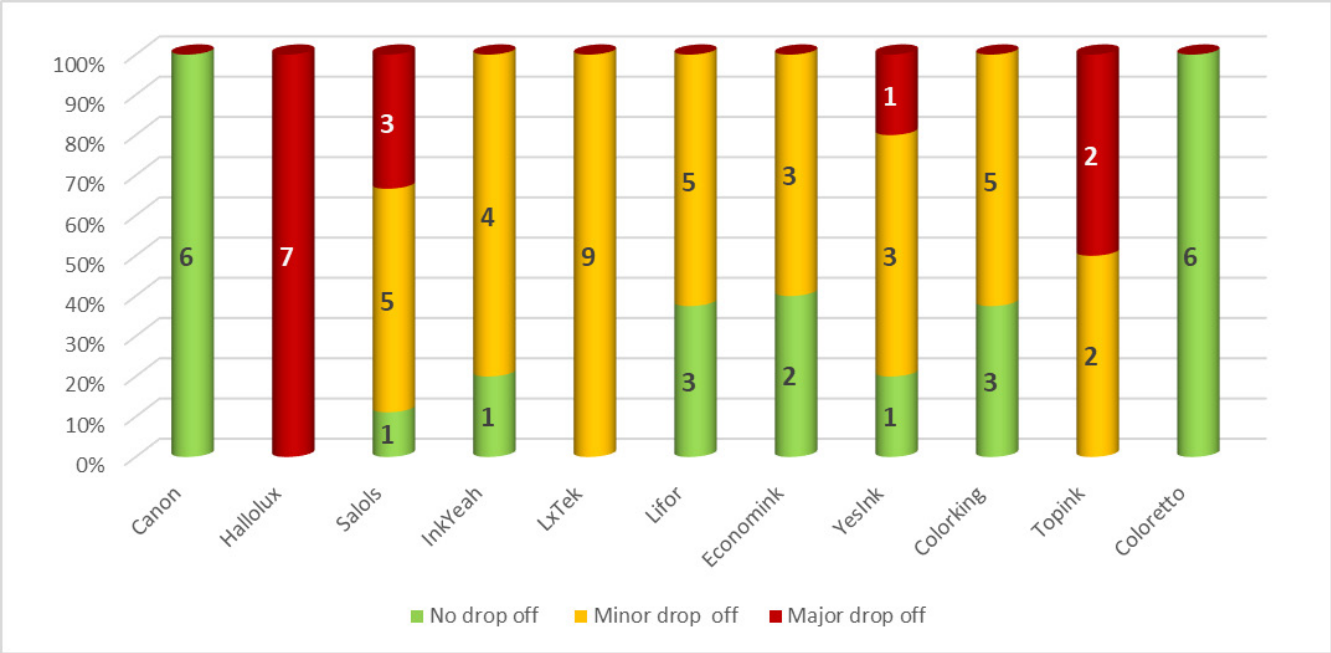
Quality of the image sample denoted by a colour and number. A sample deemed unsuitable for use both outside and inside of a company would be coloured red and labelled with the number 1, for example.

Canon PIXMA MG3650S (260 gsm)

Halftones

Both Canon and Coloretto branded cartridges output samples with no quality issues on 260 GSM media. Salols cartridges saw three poor samples, with Topink producing two and YesInk producing three. Hallolux cartridges were the least performant in terms of halftone quality with each of the seven samples assessed having shown significant drop off in quality. Each LxTek sample saw minor quality drop off compared to OEM.

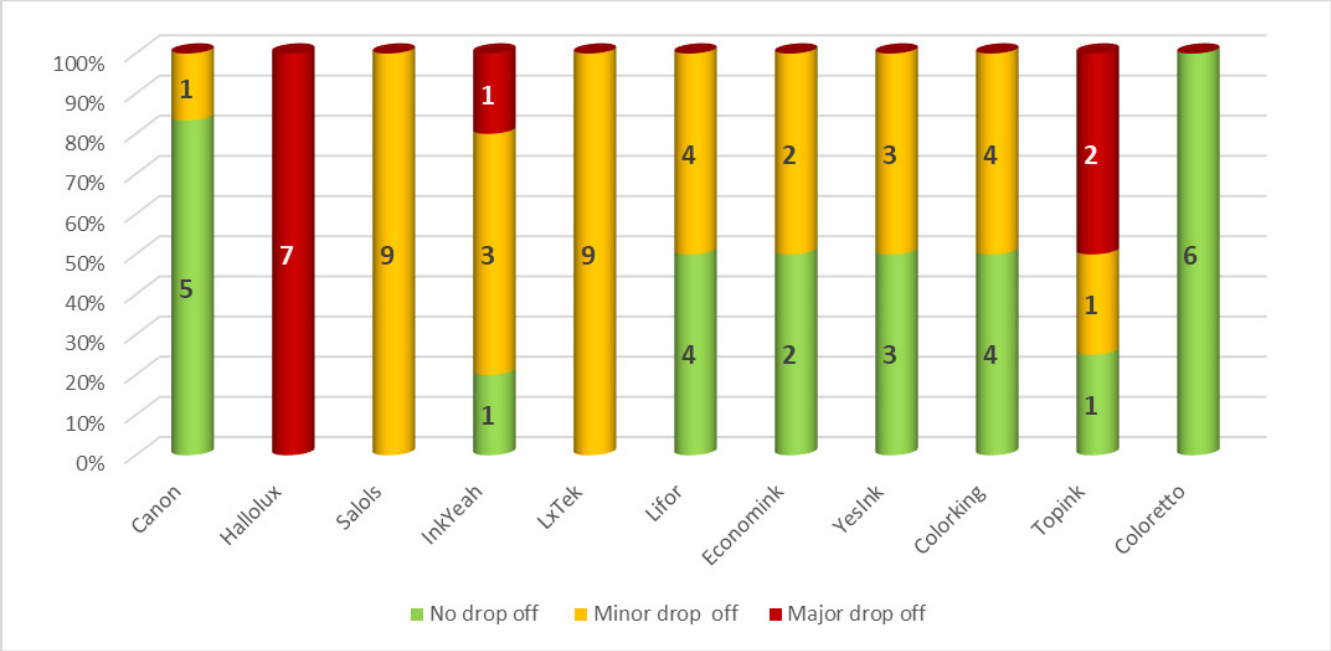
Halftone Results



Text and Fine Lines

On 260 GSM media, samples from Canon cartridges produced strong text and line quality across the board, with only one sample exhibiting minor drop off. Here again, Hallolux samples were the least performant with each of the seven demonstrating major drop off. Salols and LxTek samples all exhibited minor drop off as well, with half of the samples each from Lifor, Economink, YesInk, and ColorKing exhibiting minor drop off in quality.

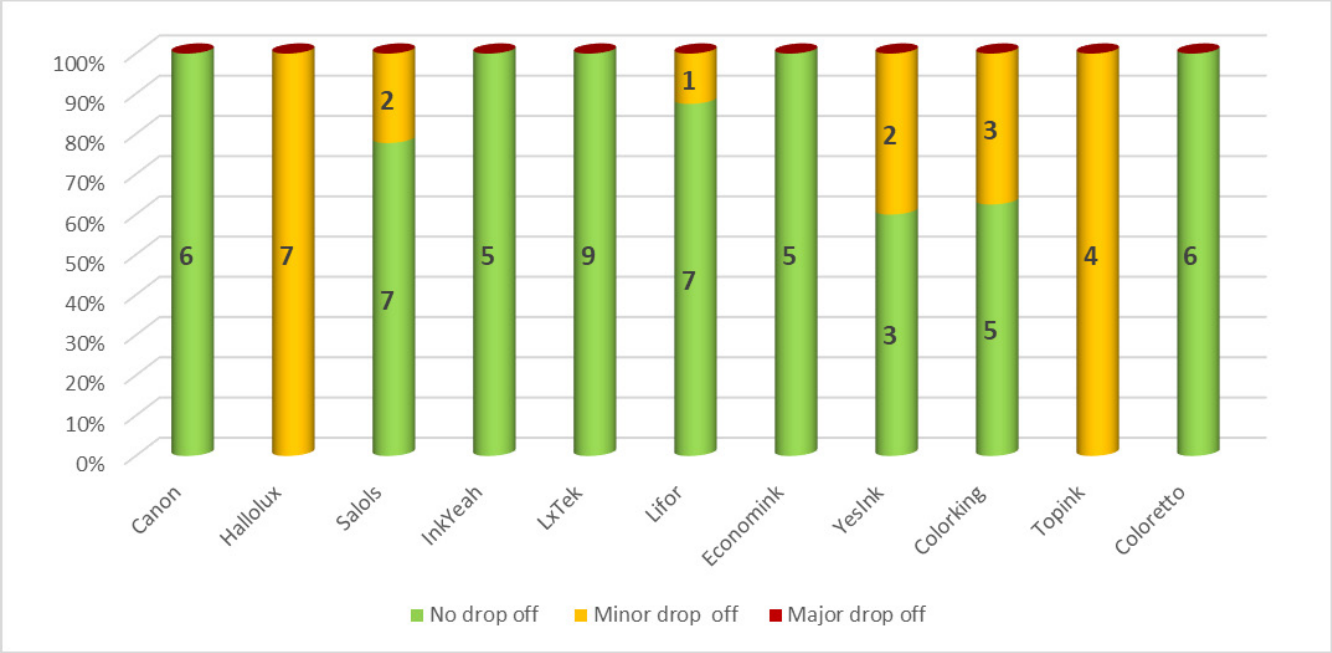
Text and Fine Lines Results



Wicking Test

While most brands fared well in Keypoint Intelligence's wicking testing, all samples from both Hallolux and Topink cartridges saw minor drop off. Seeral other brands produced samples which had minor drop off from testing: three samples from ColorKing, two samples each from Salols and YesInk, as well as one from Lifor.

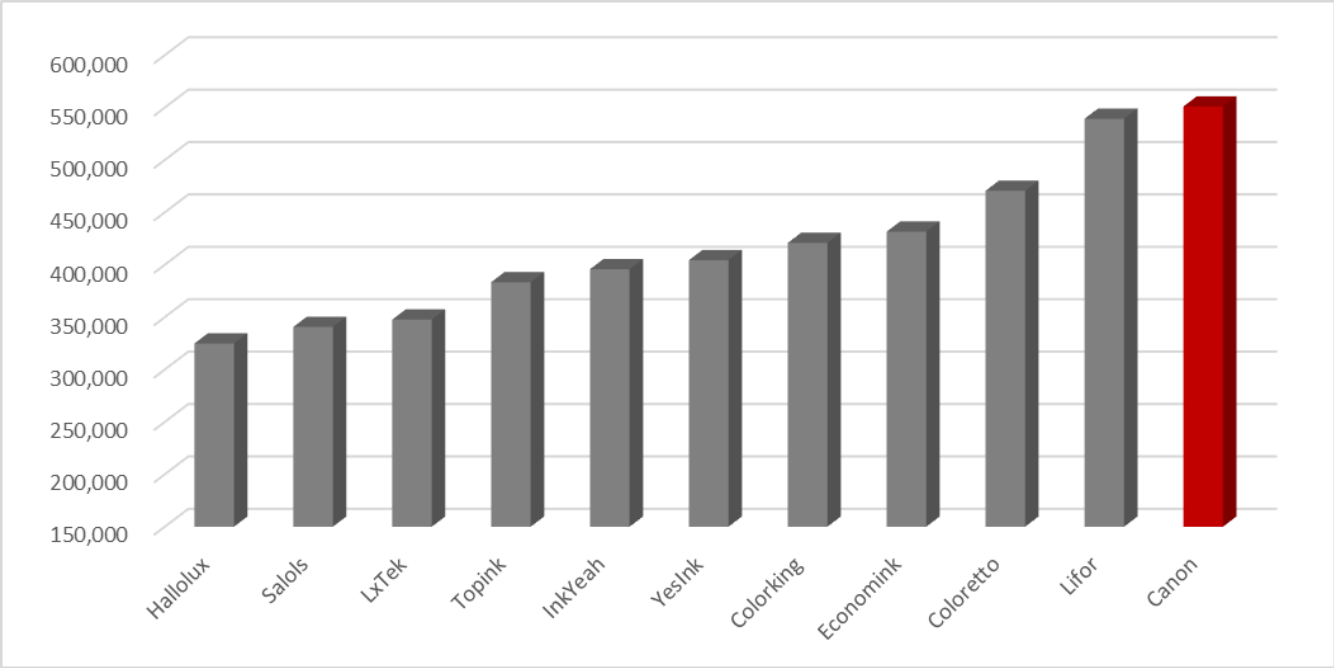
Wicking Results



Colour Gamut

The Canon OEM brand's average colour gamut volume was the highest among the tested brands, with the lowest average gamut volume produced by Hallolux supplies. The Canon gamut variance was also the smallest in comparison to the competitors, meaning a more consistent performance across each sample assessed.

Average Gamut Volume by Brand



Waterfastness Test

Each brand passed waterfastness testing, with Hallolux, Economink, YesInk, and topink samples showing only minor drop off in both drip tests. ColorKing samples were not subject to wasterfastness testing.

Waterfastness Results

	Drip 1	Drip 2
Canon	3	3
Hallolux	2	2
Salols	3	3
InkYeah	3	3
LxTek	3	3
Lifor	3	3
Economink	2	2
YesInk	2	2
Colorking	0	0
Topink	2	2
Coloretto	3	3

Brands marked with a 0 (ColorKing) were not subject to waterfastness testing.

Highlighter Test

Image quality samples from all of the ink cartridge brands tested passed highlighter testing, especially in the alkaline test. As for the acid test, Canon, Economink, Lifor, and YesInk samples exhibited minor drop off.

Highlighter Test Results

	Acid	Alkaline
Canon	2	3
Hallolux	3	3
Salols	3	3
InkYeah	3	3
LxTek	3	3
Lifor	2	3
Economink	2	3
YesInk	2	3
Colorking	0	0
Topink	3	3
TonerKingdom	3	3

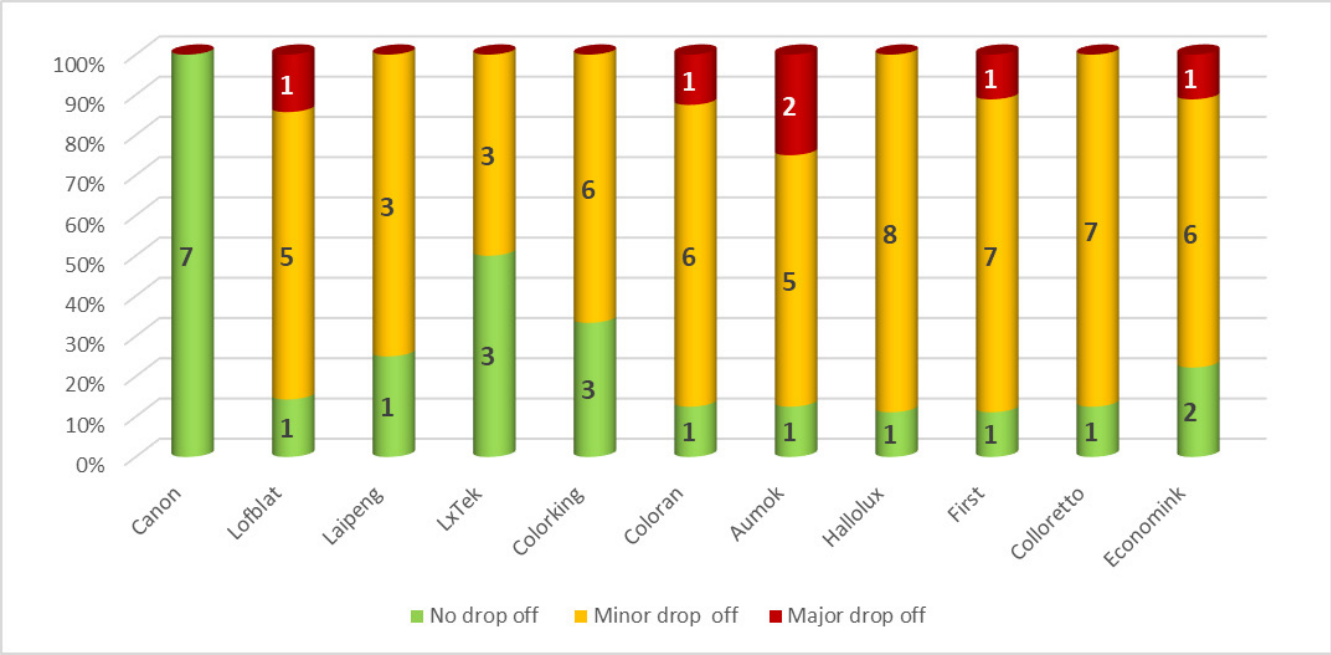
Brands marked with a 0 (ColorKing) were not subject to waterfastness testing.

Canon PIXMA TS3550i (80 gsm)

Halftones

All halftone samples printed with the Canon OEM ink was strong across the board, while most third-party cartridge brands struggled to produce samples with no defects. In fact, 70% of third-party brands produced only one sample with no defects each, with Lofblat, Coloran, First and Economink all producing one sample with major drop off. Aumok supplies produced two samples with major drop off. LxTek and ColorKing were the only two third-party brands to produce three halftone quality samples that were considered good.

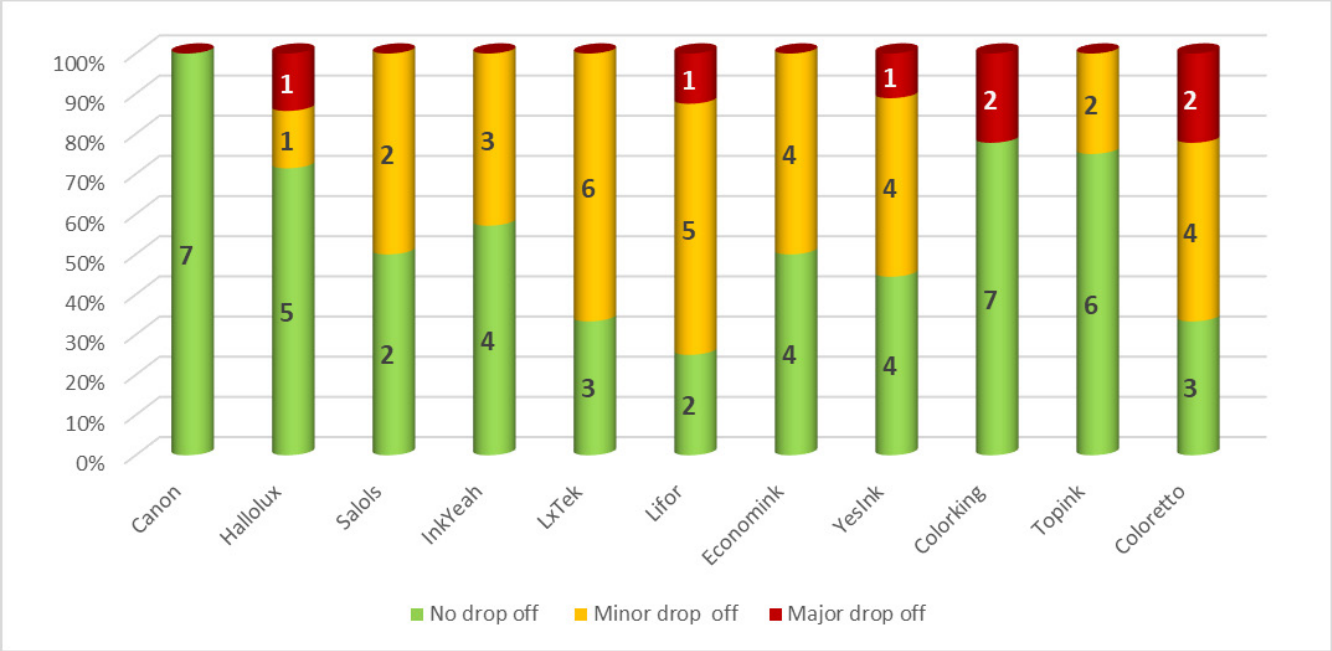
Halftone Results



Text and Fine Lines

Here again, Canon supplies fared better than the competition, with five of the 10 third-party brands producing poor halftone samples while Canon samples saw now drop off.

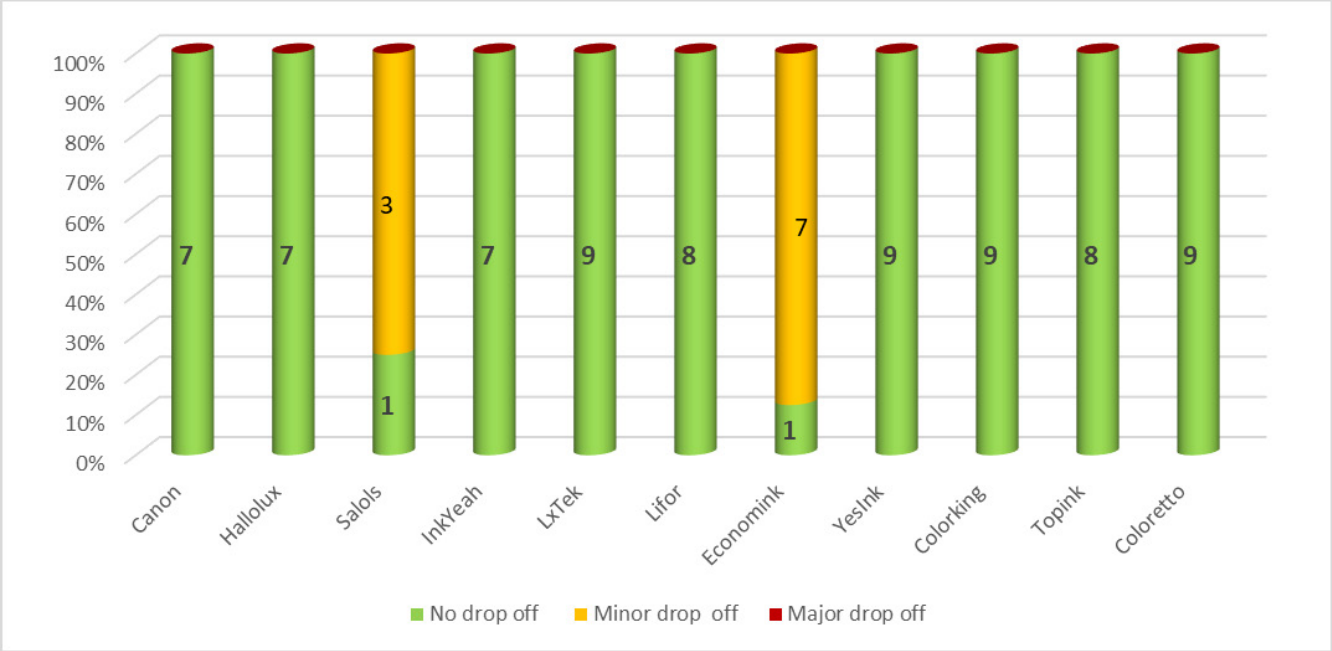
Text and Fine Lines Results



Wicking Test

None of the brands tested showed significant signs of quality drop off from wicking testing. Only two brands produced samples with minor drop off: Salols with 3 and Economink with 7.

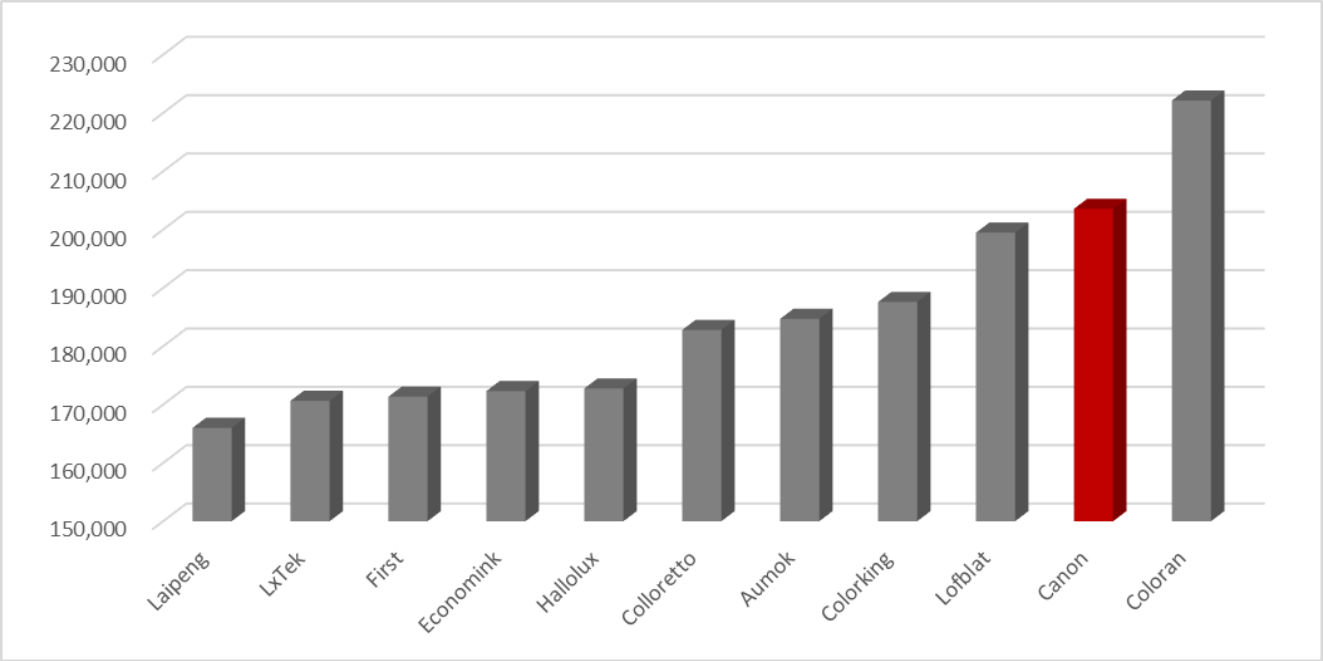
Wicking Results



Colour Gamut

The Canon OEM brand's average colour gamut volume is the second highest behind Coloran, though Canon maintained the lowest gamut variance than any other brands.

Average Gamut Volume by Brand



Waterfastness Test

Of the 11 cartridge brands tested, only Canon and ColorKing samples saw no drop off from waterfastness testing, while Lofblat and Coloran samples saw major drop off. The other brands all saw minor drop off in testing.

Waterfastness Results

	Drip 1	Drip 2
Canon	3	3
Lofblat	1	1
Laipeng	2	2
LxTek	2	2
Colorking	3	3
Coloran	1	1
Aumok	2	2
Hallolux	2	2
First	2	2
Colloretto	2	2
Economink	2	2

Highlighter Test

Image quality samples from all of the tested ink cartridge brands passed highlighter testing. All but Coloran received the highest marks in the alkaline highlighter test, while Canon, Laipeng, Coloran, Aumok, and Colloretto all saw minor drop off.

Highlighter Test Results

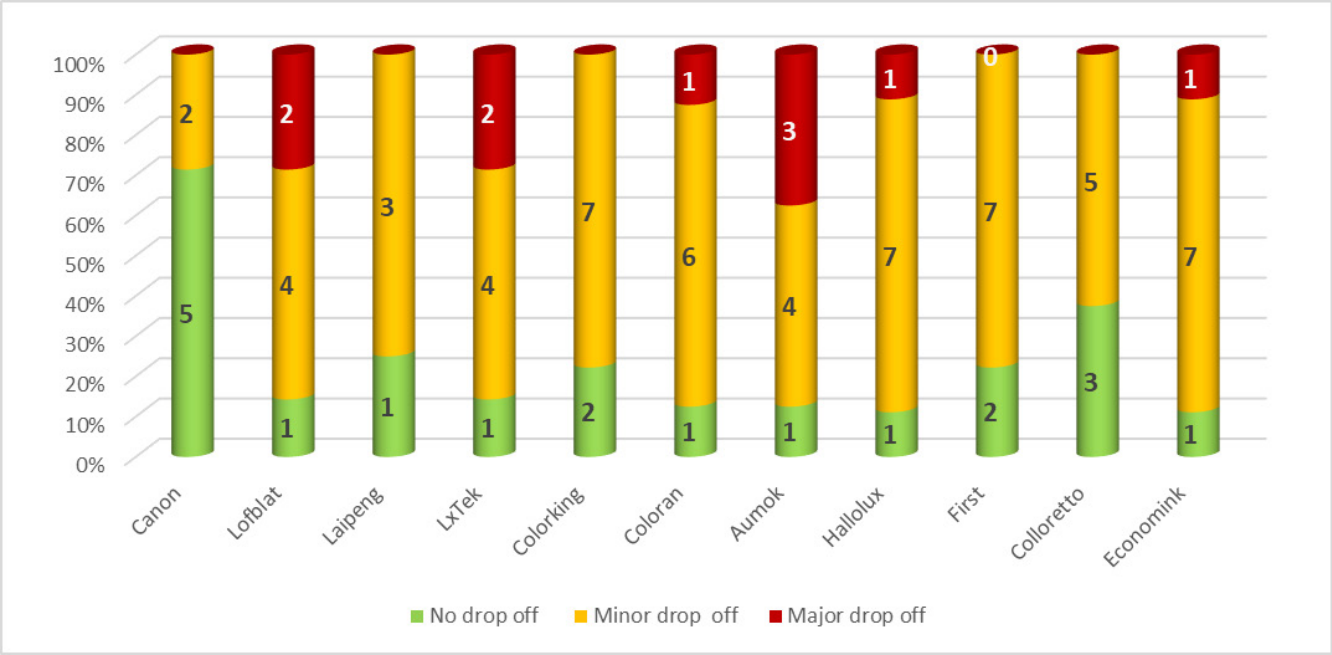
	Acid	Alkaline
Canon	2	3
Lofblat	3	3
Laipeng	2	3
LxTek	3	3
Colorking	3	3
Coloran	2	2
Aumok	2	3
Hallolux	3	3
First	3	3
Colloretto	2	3
Economink	3	3

Canon PIXMA TS3550i (260 gsm)

Halftones

Canon inks were the most performant in terms of halftone quality with just two samples with minor drop off and five samples with none. Six third-party brands produced at least once sample with major drop off (Lofblat, LxTek, Coloran, Aumok, Hallolux, and Economink). Third-party brands produced anywhere from 50% to 78% of samples with minor drop off in halftone quality.

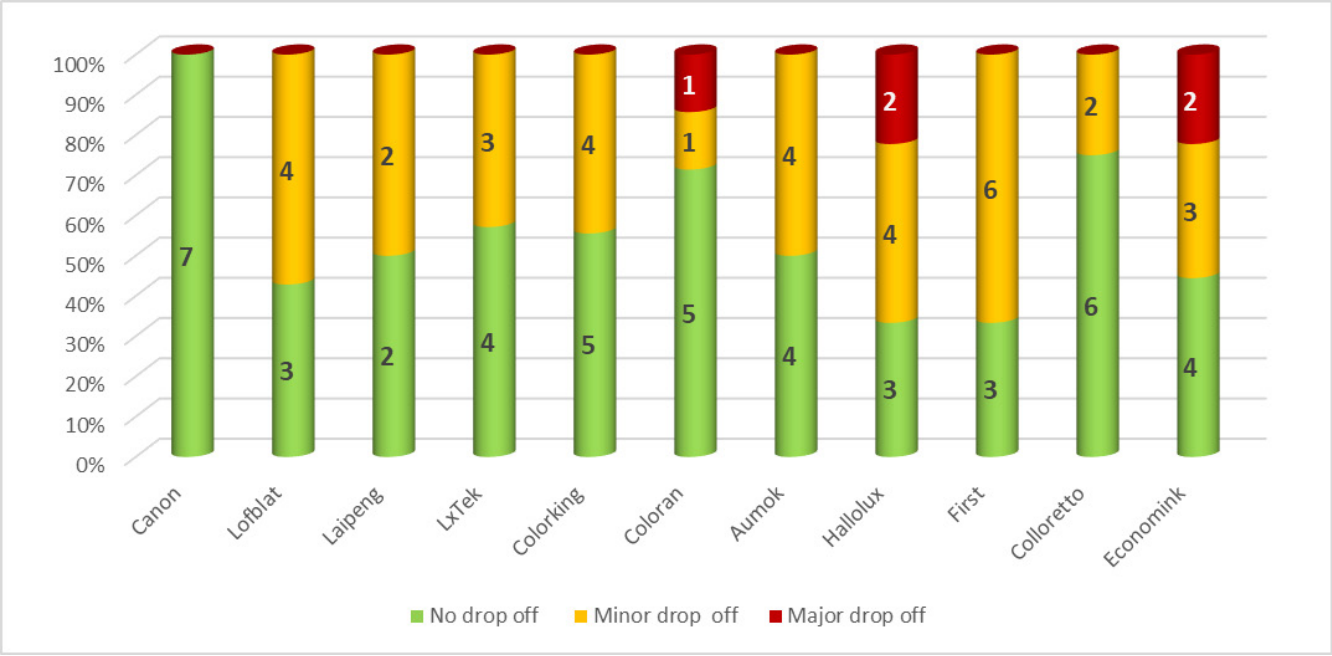
Halftone Results



Text and Fine Lines

Canon OEM inks received the highest marks for text and fine line quality unlike the third-party brands tested. Three third-party brands produced at least one sample with poor text and fine line quality (Coloran, Hallolux, and Economink).

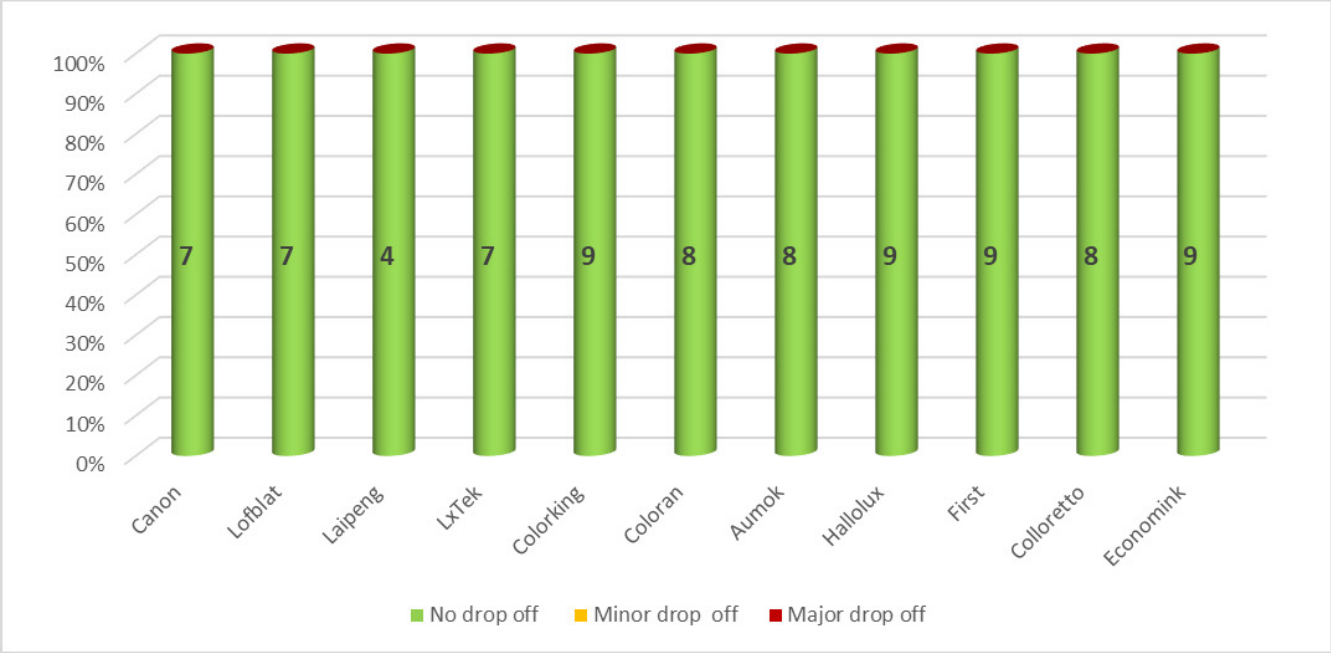
Text and Fine Lines Results



Wicking Test

None of the brands tested showed signs of quality drop off from wicking testing. **Wicking Results**

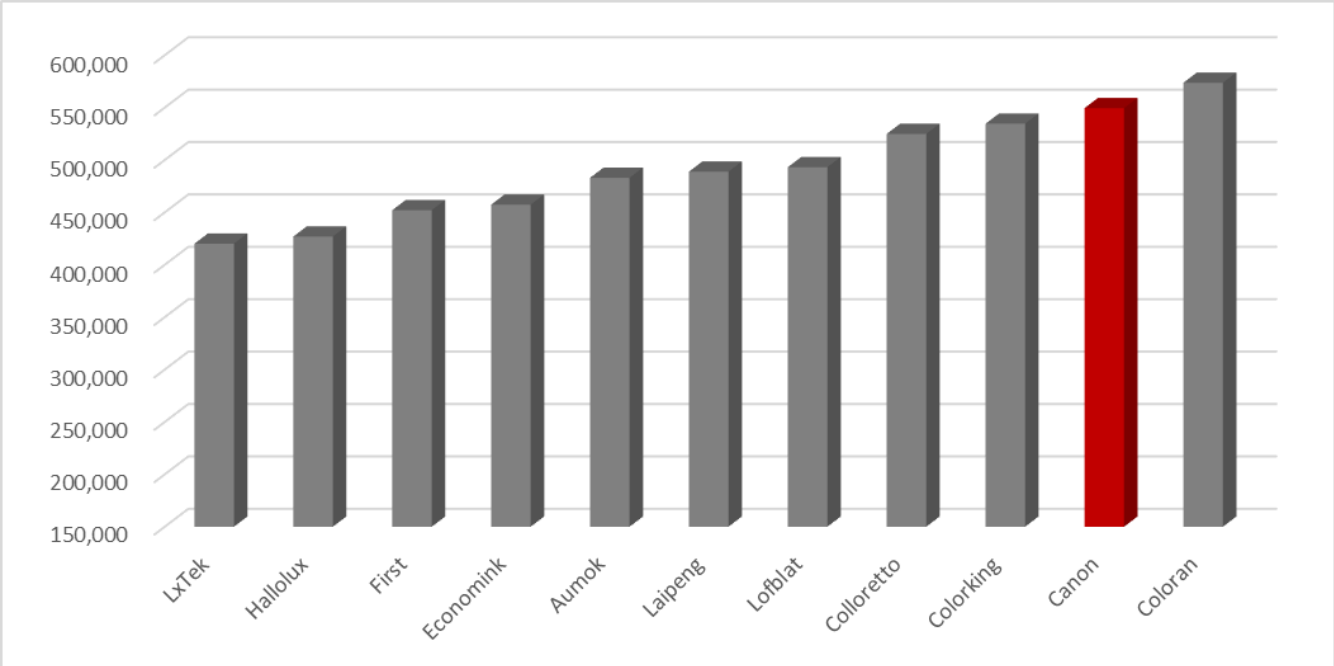
Wicking Results



Colour Gamut

The Canon OEM brand's average colour gamut volume is the second highest behind Coloran, though Canon maintained the lowest gamut variance than any other brands.

Average Gamut Volume by Brand



Waterfastness Test

None of the 11 cartridge brands tested saw major drop off from waterfastness testing, but Lofblat, Coloran, Aumok, Hallolux, Coloretto and Economink samples exhibited minor drop off in both drip tests

Waterfastness Results

	Drip 1	Drip 2
Canon	3	3
Lofblat	2	2
Laipeng	3	3
LxTek	3	3
Colorking	3	3
Coloran	2	2
Aumok	2	2
Hallolux	2	2
First	3	3
Colloretto	2	2
Economink	2	2

Highlighter Test

Image quality samples from all of the tested ink cartridge brands passed highlighter testing, with each brand receiving the highest marks in the alkaline test. As for the acid highlighter test, only minor drop off in quality was evident in Canon, Laipeng, ColorKing, Coloran, and Aumok supplies.

Highlighter Test Results

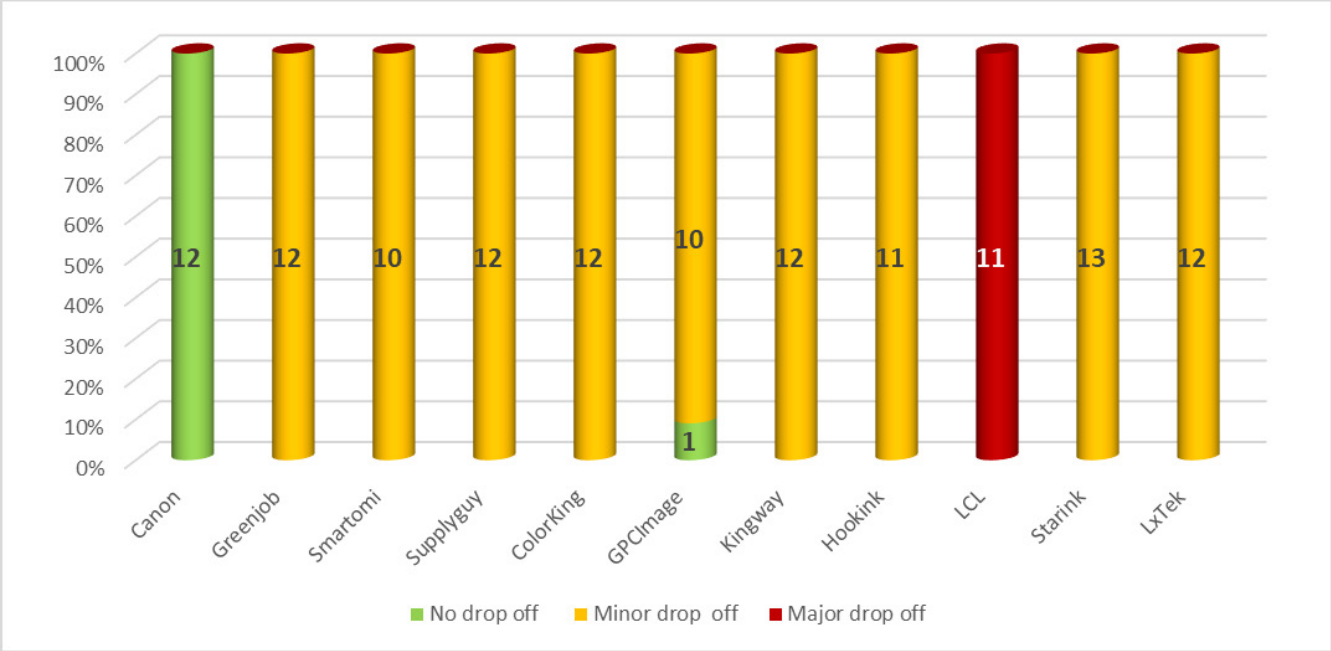
	Acid	Alkaline
Canon	2	3
Lofblat	3	3
Laipeng	2	3
LxTek	3	3
Colorking	2	3
Coloran	2	3
Aumok	2	3
Hallolux	3	3
First	3	3
Colloretto	3	3
Economink	3	3

Canon PIXMA TS705a (80 gsm)

Halftones

Canon cartridges outperformed all of the third-party brands in terms of halftone quality. 90% of third-party brands did not produce a single sample with no drop off in quality compared to Canon, with 100% of the samples produced by LCL showing poor halftone quality with major drop off. GPCImage was the only brand which saw a single sample with no drop off, though the 91% of samples exhibited minor drop off.

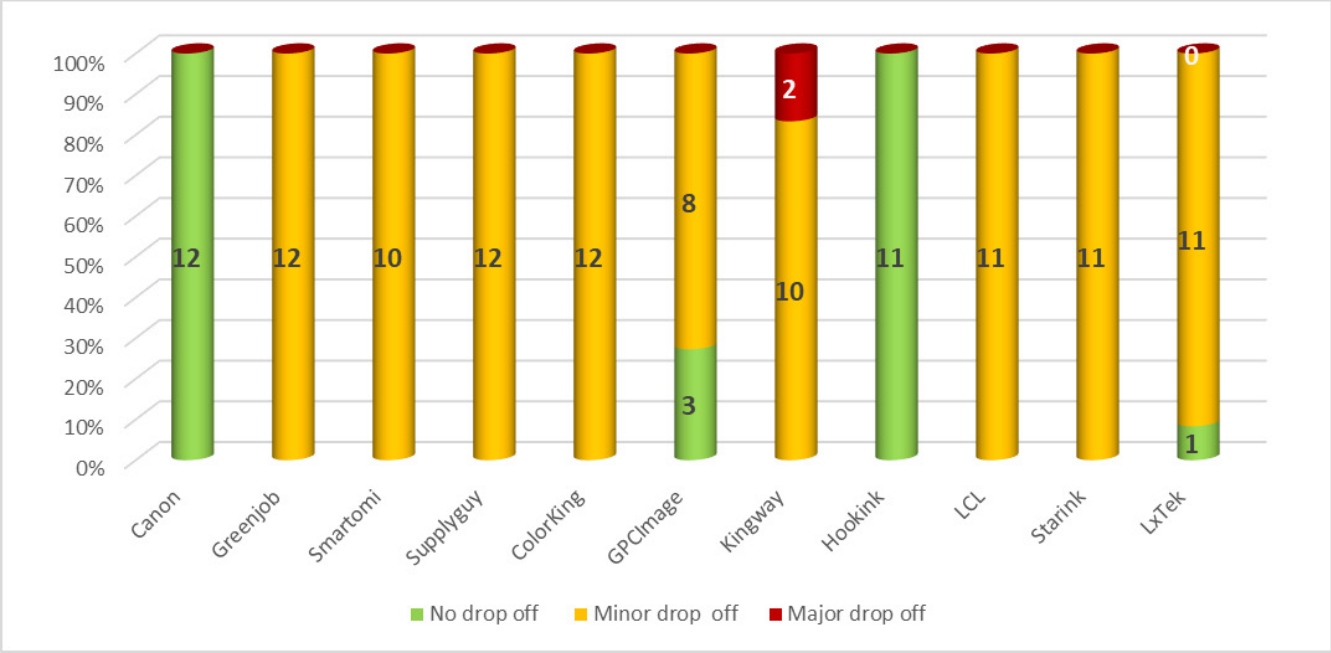
Halftone Results



Text and Fine Lines

Both Canon and Hookink cartridges produced samples which received the highest marks for text and line quality and no samples with evident quality drop off. However, 70% of third-party brands were unable to produce a sample with no drop off in quality from OEM supplies. Aside from Hookink samples showing 100% quality, the second best performing third-party brand was GPCImage, from which 73% of samples showed minor fall off.

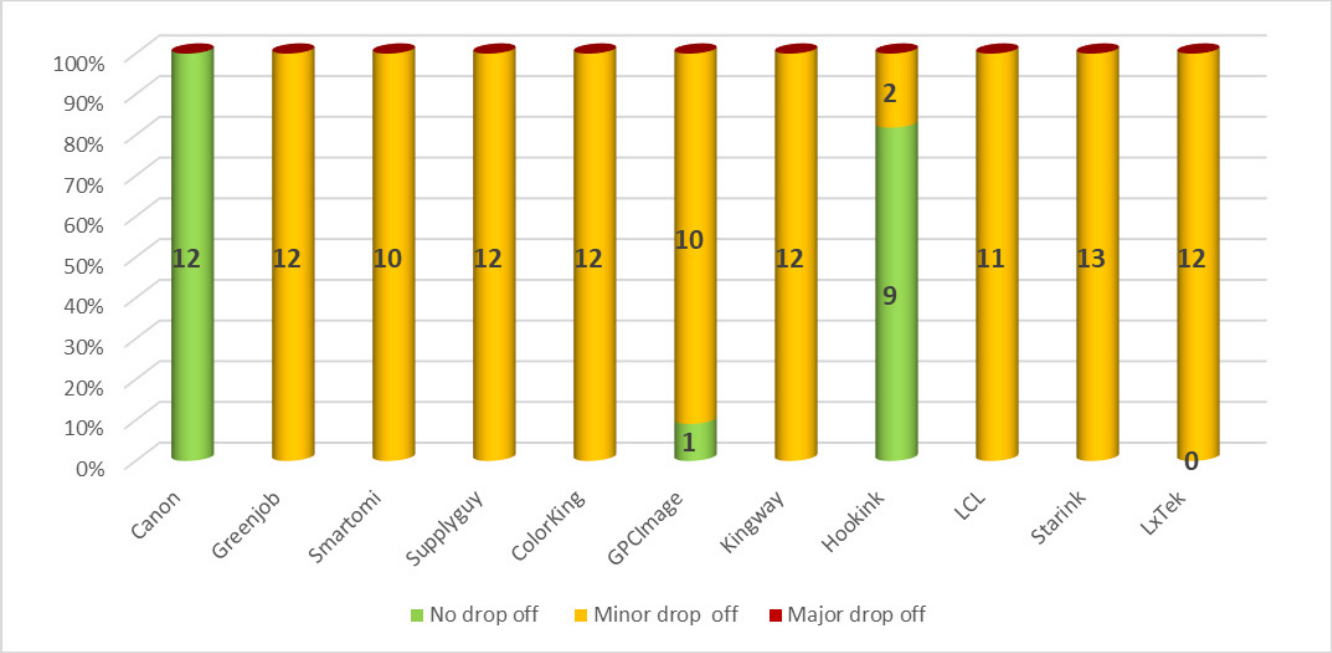
Text and Fine Lines Results



Wicking Test

100% of Canon cartridge samples showed no signs of drop off from wicking testing compared to 82% of Hookink samples showing no drop off. GPCImage produced one sample with no drop off, though only 9% of samples were considered good while the remaining showed minor drop off. All samples from the remaining eight third-party cartridge brands produced samples with minor quality drop off.

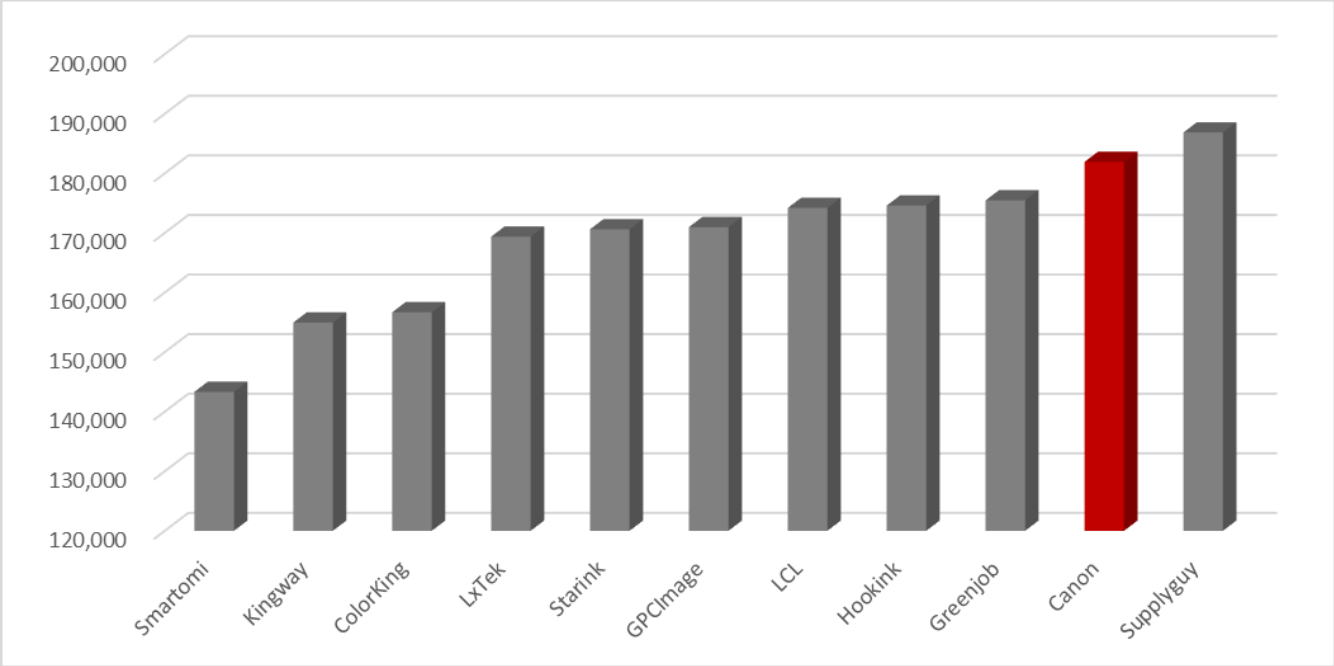
Wicking Results



Colour Gamut

The Canon OEM brand's average colour gamut volume is the second-highest behind Supplyguy, with Smartomi cartridges showing the smallest gamut volume of the bunch (27% smaller than Canon cartridges).

Average Gamut Volume by Brand



Waterfastness Test

Output using Canon OEM cartridges passed waterfastness testing with the highest marks. As for the third-party cartridges, Hookink samples saw major drop off in both drip tests, while samples from Smartomi, Kingway, Hookink, and LCL cartridges showed major drop off passed the waterfastness test.

Waterfastness Results

	Drip 1	Drip 2
Canon	3	3
Greenjob	2	2
Smartomi	1	2
Supplyguy	2	2
ColorKing	0	0
GPCImage	2	2
Kingway	1	2
Hookink	1	1
LCL	1	2
Starink	2	2
LxTek	2	2

Brands marked with a 0 (ColorKing) were not subject to waterfastness testing.

Highlighter Test

Image quality samples was generally good across each of the brands, save for Greenjob and Kingway, both of which exhibited significant drop off in quality from the acid highlighter test.

Highlighter Test Results

	Acid	Alkaline
Canon	3	3
Greenjob	1	2
Smartomi	2	3
Supplyguy	2	3
ColorKing	0	0
GPCImage	2	2
Kingway	1	2
Hookink	2	2
LCL	2	2
Starink	2	3
LxTek	3	2

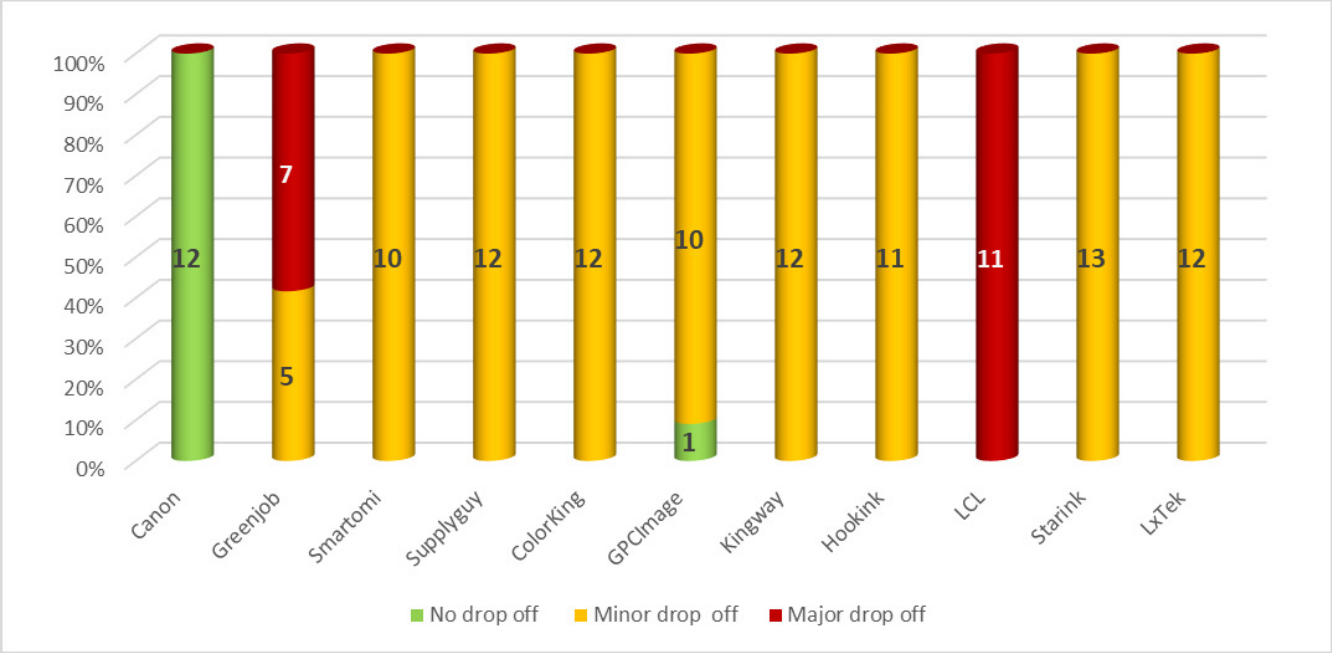
Brands marked with a 0 (ColorKing) were not subject to waterfastness testing.

Canon PIXMA TS705a (260 gsm)

Halftones

When printed on 260 gsm media, samples printed with OEM cartridges showed no quality issues, while GPCImage was the only other brand to produce a sample with no drop off in quality compared to Canon. 100% of LCL samples showed significant drop off in halftone quality, and 58% of Greenjob samples were deemed as unacceptable for professional use. Excluding those third-party brands, none of the remaining third-party brands produced output that did not have some sort of quality drop off.

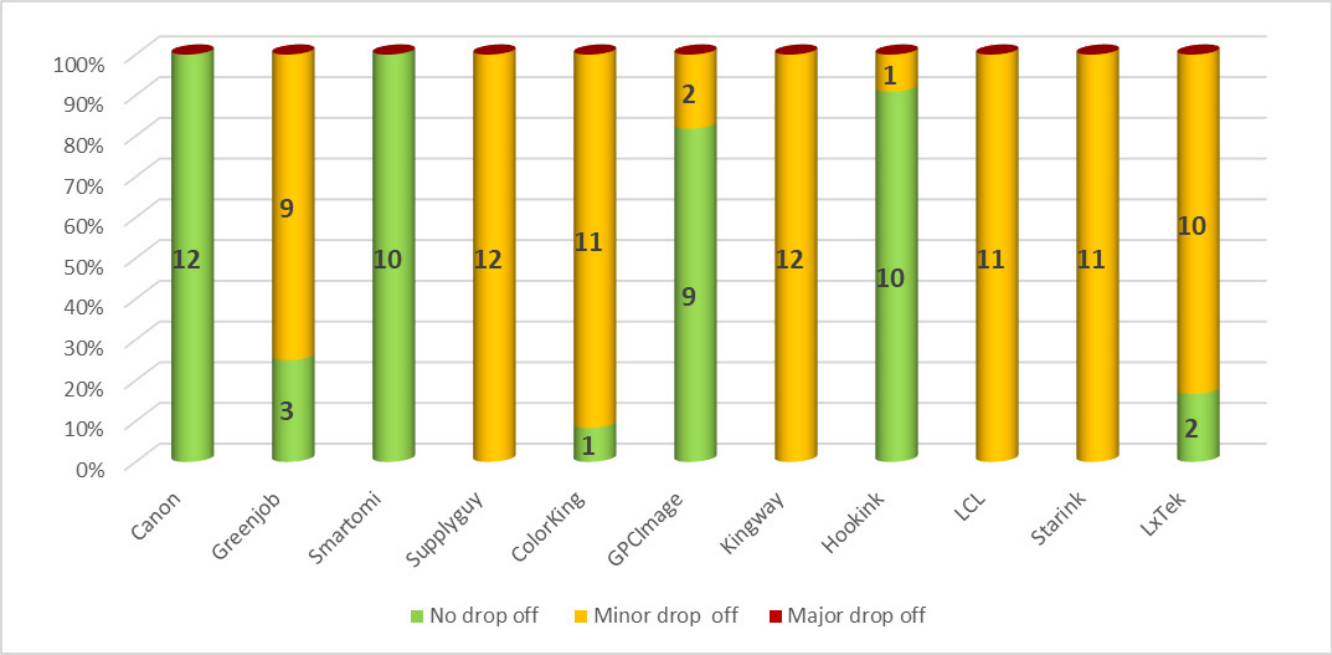
Halftone Results



Text and Fine Lines

Unlike with halftone quality, text and fine line quality was good across several brands on 260 GSM media, including Canon and Smartomi with 100% of samples receiving the highest marks, along with GPCImage and Hookink each with 82% and 91% good samples, respectively. Greenjob, ColorKing, and LxTek produced several good samples, but the majority of samples from each brand exhibited some drop off in quality compared to Canon. Each sample from Supplyguy, Kingway, LCL and Starink all saw minor defects in text and line quality..

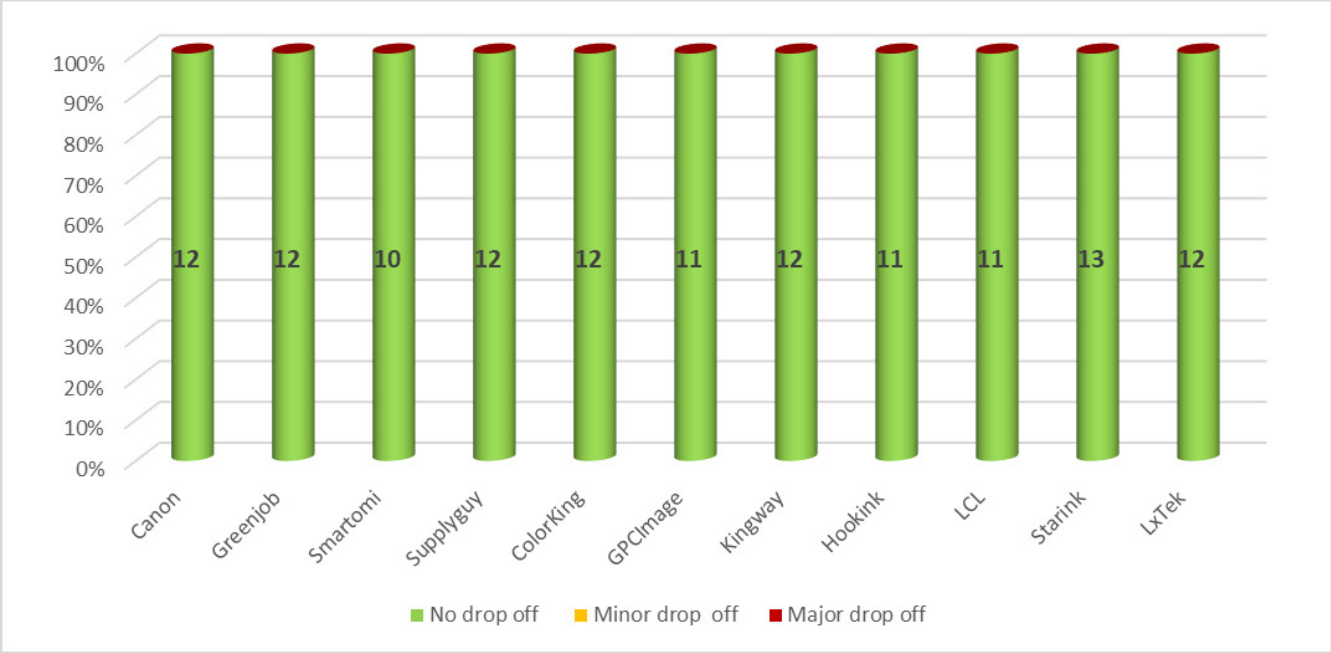
Text and Fine Lines Results



Wicking Test

None of the brands tested showed signs of wicking when output was printed on 260 gsm media.

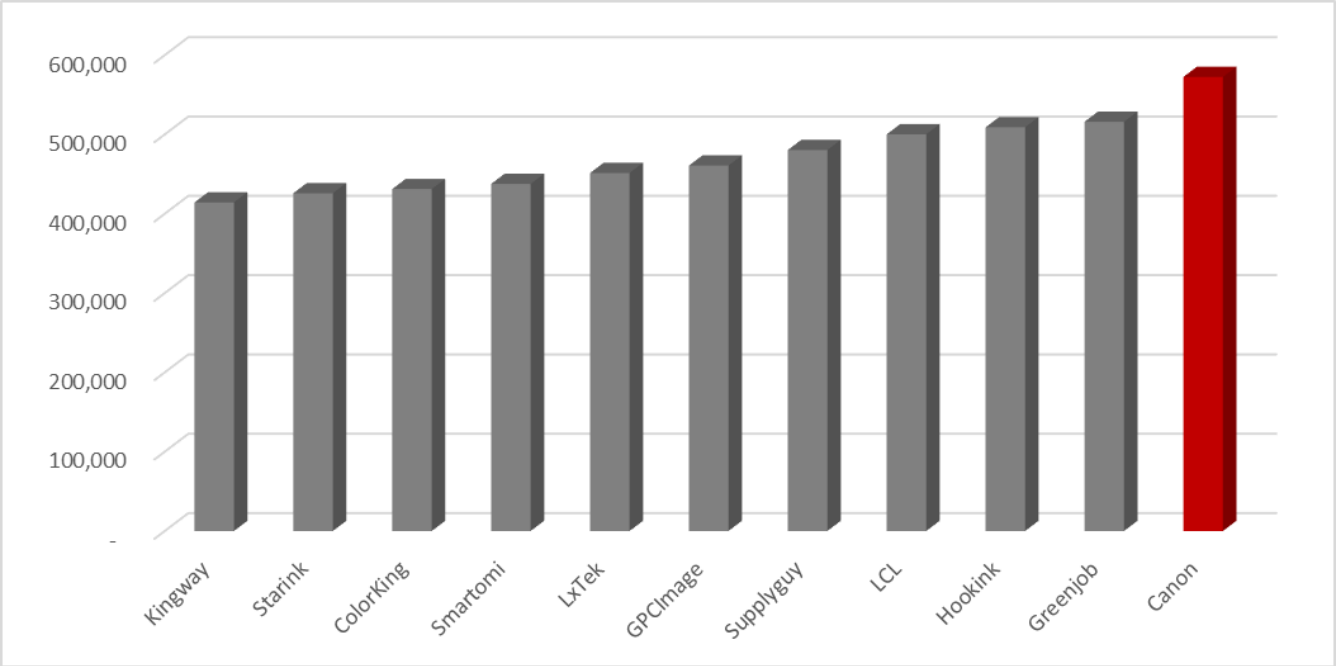
Wicking Results



Colour Gamut

When tested using 260 gsm media, the Canon OEM ink had the largest average colour gamut volume of all brands tested, though Hookink showed a gamut space that was 77% more consistent over time than Canon.

Average Gamut Volume by Brand



Waterfastness Test

When tested using 260 gsm media, all of the brands which were tested passed waterfastness testing.

Waterfastness Results

	Drip 1	Drip 2
Canon	0	0
Greenjob	3	3
Smartomi	3	3
Supplyguy	3	3
ColorKing	0	0
GPCImage	3	3
Kingway	3	3
Hookink	3	3
LCL	3	3
Starink	3	3
LxTek	3	3

Brands marked with a 0 were not subject to waterfastness testing.

Highlighter Test

Image quality samples from most of the ink cartridge brands tested passed highlighter testing save for Greenjob and Kingway, both of which exhibited significant drop off in the acid test, with Kingway showing minor drop off in the alkaline test. Any cartridge brands with 0 in each test field were not subjected to the highlighter test.

Highlighter Test Results

	Acid	Alkaline
Canon	0	0
Greenjob	1	3
Smartomi	3	3
Supplyguy	3	3
ColorKing	0	0
GPCImage	3	3
Kingway	1	2
Hookink	3	3
LCL	3	3
Starink	3	3
LxTek	3	3

Test Methodology

Keypoint Intelligence used 40 Canon printers to test multiple compatible ink cartridge brands, including the Canon OEM brand. The OEM and third-party cartridges were run on the following devices: the PIXMA MG2556S, PIXMA MG3650S, PIXMA TS3550i and the PIXMA TS705a, with 10 compatible brands tested in each device. Cartridges for all ink cartridge brands were tested for page yield, reliability and image quality. To eliminate cross contamination, brand-new devices were dedicated to the testing of each ink cartridge brand. Each ink cartridge brand was tested using an ISO test document and Keypoint Intelligence's proprietary image quality test targets, with each device being run until it had consumed 10 sets of ink cartridges. Each printer was operated in default mode via Keypoint Intelligence's network connection, with its PCL driver. Page yield, cartridge reliability and image quality were evaluated per the following:

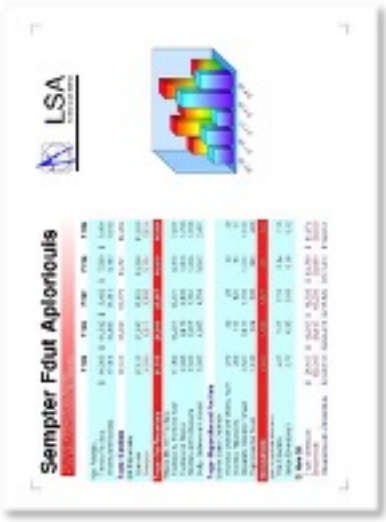
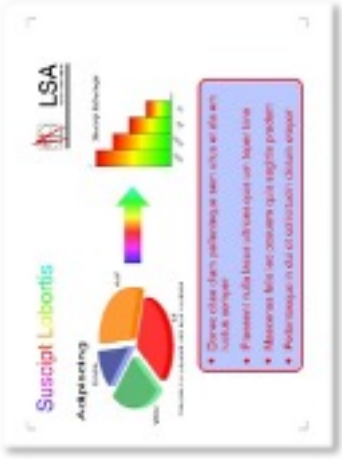
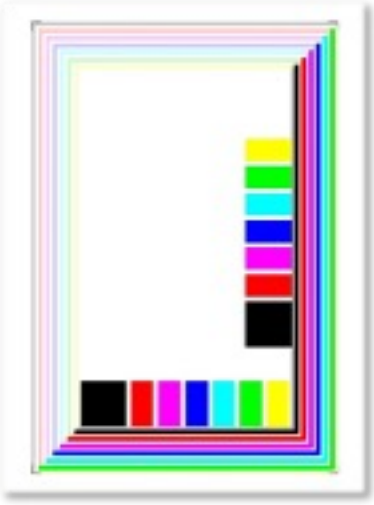
A. Ink Yield: Ink cartridges of each ink brand were run to exhaustion on a brand-new Canon printer. Yield was determined using the ISO 24712 colour test target. A comparative yield assessment was conducted to measure the genuine Canon ink cartridge's performance against that of each "compatible" brand. Each cartridge was weighed before and after testing to determine net ink weight. Each cartridge was run until the "ink out" warning was displayed on the device's LCD, provided that image quality remained acceptable and no reliability problems were encountered beforehand. When it had expired, the cartridge was removed and weighed, and the page count was recorded. The results of the "average-pages-printed" performance were calculated from the performance of all cartridges tested (including all "out-of-box" failures and print quality and reliability failures that occurred). Any cartridge malfunctions, including "out-of-box" failures, operation failures, ink leakage, cartridge flaws and background on printed pages, as well as printer malfunctions caused by cartridges were recorded. Cartridges classified as "out-of-box" failures are those that either could not be run due to excessive ink leakage, or are broken, or have missing parts, as well as cartridges that produced only 10 or fewer acceptable pages in the test. Cartridges classified as "early end of life" are those that produced less than 70% of the rated yield.

B. Hardware Observations: Keypoint Intelligence test technicians photographed any defective cartridges, ink leaks, error messages and device contamination.

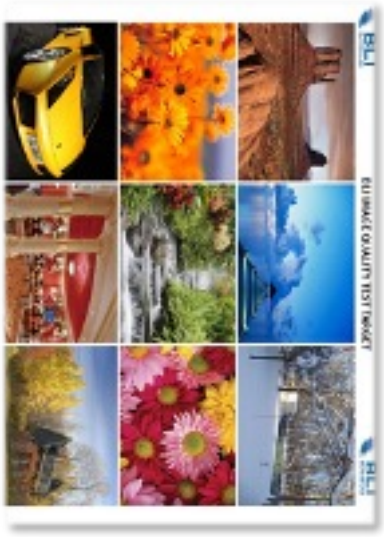
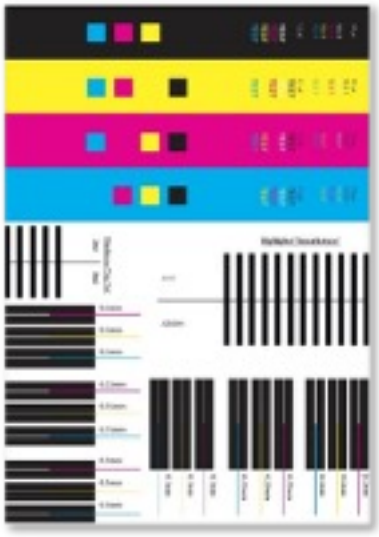
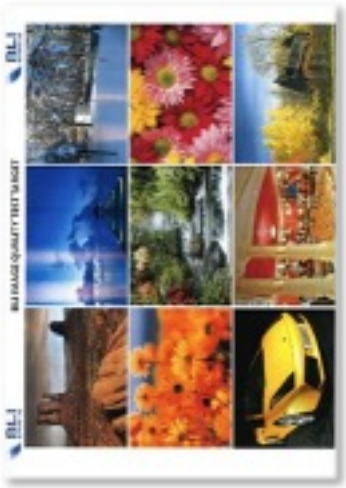
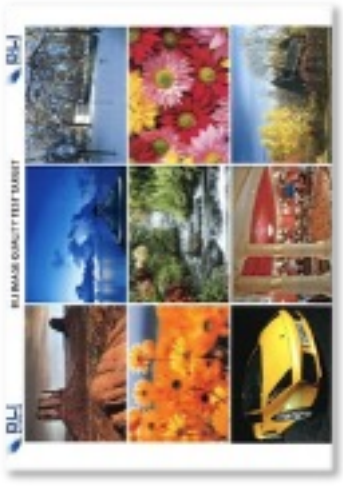
C. Reliability: Throughout testing, Keypoint Intelligence test technicians recorded any cartridge malfunctions, such as operation failure, ink leakage and background on printed pages, as well as device malfunctions caused by cartridges.

D. Image Quality: In evaluating image quality, Keypoint Intelligence assessed the output quality over a selection of parameters, including solid density, fine lines, text reproduction and halftones at the start of testing and at every 500-impression interval thereafter. Output was graded from one to three, with one-grade output deemed unsuitable for use inside or outside of a company and three-grade output deemed suitable for either use. Image quality samples were printed on 80 gsm media and 260 gsm glossy media.

Image Quality Test Targets (ISO)

		
ISO 24712 Test Target Page 1	ISO 24712 Test Target Page 2	ISO 24712 Test Target Page 3
		
ISO 24712 Test Target Page 4	ISO 24712 Test Target Page 5	

Keypoint Intelligence Image Quality Test Targets

		
IQ Test Target One	IQ Test Target Two	IQ Test Target Three
		
IQ Test Target Four	IQ Test Target Five	IQ Test Target Six

E. Impact of Water Spillage: Keypoint Intelligence's lab technicians used a proprietary test target to test the effect of dropping a measured amount of water on printed output. The water was added to the output placed on a flat surface. The output was also placed at a specific angle to test the visual impact of having a measured amount of water run over the test marker.

F. Impact of Highlighter Overwriting: Keypoint Intelligence's lab technicians used a proprietary test target to assess the impact of overwriting printed output with a highlighter pen. Keypoint Intelligence's technicians highlighted printed output, waited for two minutes and then performed a 300dpi scan on the output to create a searchable PDF to assess the effect of highlighter smearing on legibility.

Test Environment/Conditions

All testing was conducted in a controlled environment at Keypoint Intelligence's lab test facility located at Unit 11, The Business Centre, Molly Millars Lane, Wokingham, RG41 2QZ per the following conditions:

A. Temperature was maintained at 22°C, +/-2.7°C with daily conditions monitored and logged 24/7 by a Seven-Day Temperature/Humidity Chart Recorder.

B. Relative humidity was maintained within 45% +/- 10% with daily conditions monitored and logged 24/7 by a Seven-Day Temperature/Humidity Chart Recorder.

C. Materials conditioning: Printers, paper and cartridges were acclimatized to the above conditions for a minimum of 24 hours prior to testing. Prior to acclimatization, packaging and shipping materials were opened in a manner that prevented damage from occurring to the print cartridge during acclimatization. Paper was acclimatized in a ream wrapper. All devices and cartridges tested were purchased by Keypoint Intelligence on the open market.

ABOUT KEYPOINT INTELLIGENCE

Keypoint Intelligence is a one-stop shop for the digital imaging industry. With our unparalleled tools and unmatched depth of knowledge, we cut through the noise of data to offer clients the unbiased insights and responsive tools they need in those mission-critical moments that define their products and empower their sales.

For over 60 years, Keypoint Intelligence has been the global document imaging industry's resource for unbiased and reliable information, test data, and competitive selling tools. What started out as a consumer-based publication about office equipment has become an all-encompassing industry resource. Keypoint Intelligence evolves in tandem with the ever-changing landscape of document imaging solutions, constantly updating our methods, expanding our offerings, and tracking cutting-edge developments.

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