April 2024

Custom Test Report

Canon imagePROGRAF GP-4600S vs. Epson SureColor SC-P8500D

Advantage ✓	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
Image Quality	✓	
Print Productivity	=	=
Banner Printing	=	=
Ink Consumption	✓	
Direct Print Submission Functionality	=	=
Device Feature Set		✓
Print Driver Feature Set	✓	
Printhead Reliability/Cleaning Routines	=	=

Objective

Canon Europe commissioned Keypoint Intelligence to conduct confidential performance testing on the 44" Canon imagePROGRAF GP-4600S and the Epson SureColor SC-P8500D and produce a report comparing the relative strengths and weaknesses of the two products in the areas of image quality, productivity, ink consumption, direct print submission functionality, device feature set, driver functionality and printhead stability and cleaning routines. All testing was performed in Keypoint Intelligence's European test facility in Wokingham, UK.

Executive Summary

In Keypoint Intelligence's rigorous graphic arts evaluation, both the Canon imagePROGRAF GP-4600S and the Epson SC-P8500D wide format printers excelled, each showcasing certain strengths. However, the Canon GP-4600S had an overall slight edge, demonstrating lower ink usage in two out of three tests, superior text and line artwork quality, and a larger colour gamut. Additionally, its colour halftone images exhibited brighter, punchier colours, with more natural-looking attractive skin tones, and better fine detailing in light contrast areas. A new ink formulation, containing wax, reportedly enhances scratch resistance, although this wasn't tested by Keypoint Intelligence. The Epson SC-P8500D produced better neutral grey halftone images and its feature-rich device offering includes a standard dual roll/take-up unit (an optional feature for the Canon), an optional production stacker; it also offers a lower rated power consumption.

In terms of productivity, both printers were on par. The GP-4600S had the advantage when handling high-resolution portrait images on gloss stock at higher quality settings, while the Epson SC-P8500D was more productive when printing medium resolution posters in higher quality settings and Keypoint's proprietary banner file. While both printers' banners exhibited slight banding at the fastest speed setting, the GP-4600S's unidirectional feature can eliminate banding. Usability is strong for both models, with internal illumination to view the printing status, intuitive touchscreens to aid walk-up tasks, and easy consumable replacement.

The GP-4600S further boosts productivity with hallmark features such as on-the-fly ink replacement and efficient media-loading capabilities, including automatic detection of media type and remaining quantity, without requiring a printed barcode. Media loading on the Epson is straightforward enough but requires more user intervention; paper tracking via a printed barcode is also supported. Both devices offer comprehensive job accounting tools and provide similarly intuitive direct print submission utilities and OEM mobile apps for easy job submission while on the go. Canon's web-based PosterArtist is a free graphic application design service that's worth highlighting. It provides access to a wealth of templates as well as stock photo libraries, enabling Canon users to easily create and print posters, flyers, banners, and so on. Lastly, both models' printheads performed reliably throughout the evaluation, showing no nozzle-clogging issues after a weekend's downtime. Although the Epson boasts an impressive device feature set, including its standard dual roll/take up unit, the Canon GP-4600S is judged as being the stronger performer overall, primarily due to its superior image quality, efficient ink consumption, and robust driver feature set.

Image Quality

Advantage ✓	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
Text	✓	
Fine Lines	✓	
1x1 Pixel Grid	✓	
Halftone Range	=	=
Halftone Fill	=	=
Solid Density	=	=
Colour Drift Across FOGRA39	✓	
Skin Tone Consistency	=	=
Neutral Grey Consistency		✓
Colour Photographic Images	✓	
Monochrome Photographic Images		✓
Colour Gamut	✓	

Keypoint Intelligence's image quality test evaluation was conducted using Canon's Premium semi-glossy 280gsm media and Epson's Premium semi-gloss photo 250gsm, with quality set to 'Highest' on the Canon model and the Epson model set to 'Max Quality'.

Keypoint Intelligence's colour and greyscale halftone test targets

- The GP-4600S delivered smooth and distinct fonts that were fully formed at the 5-pt. level (serif) and 3-pt. level (sans serif). Text produced by the Epson SC-P8500D was fully formed at the smallest 3-pt. level, however characters were jagged and lacked smoothness under magnification.
- Both models' fine line artwork was crisp and clean at the 0.1-pt. level; the GP-4600S produced marginally more slender lines compared to the Epson SC-P8500D and were rated excellent with Epson's rated very good.
- Circles produced by the GP-4600S were smooth and distinct and were judged very good at the 0.1-pt. level. In contrast, the Epson SC-P8500D's circles at the 0.1-pt. level were jagged and only rated fair.
- The GP-4600S produced very good CMYK 1x1 pixel grids with consistent dot formation and dot laydown. The Epson SC-P8500D's CMY 1x1 grids were incomplete and its black-on-white 2x2 grid had inconsistent dot formation and were rated fair.
- Both models delivered colour and black halftone output across the full range—from the 10% to the 100% dot-fill levels—with distinct transitions between all levels.
- Both models delivered an impressive range of halftone fills in colour mode, with no banding or graininess issues. Neutral greyscale halftone coverage was equally excellent from both units.
- The Canon GP-4600S produced higher cyan and magenta optical densities, while the Epson SC-P8500D had higher black and yellow optical densities.
- Results were mixed in the three skin tone tests; each device delivered a low drift in one of the tests and had comparable drift results in the remaining test.
- Neutral grey consistency was better maintained by the Epson SC-P8500D with a lower variance across the page.

- In Keypoint Intelligence's colour drift analysis, which involves printing and measuring (using EFI Color Verifier software), a FOGRA39 media wedge before and after productivity and ink consumption tests, the Canon device's mean Delta E drift (0.3) was marginally lower than that of the Epson (0.5).
- When printing on semi glossy media in highest quality settings, the Canon GP-4600S delivered a 12.8% larger colour gamut—737,735 CIE volume versus 654,070 CIE volume for the Epson model.
- Keypoint Intelligence technicians rated the colour and greyscale images from both devices as exceptionally high quality. Colour output from the Canon GP-4600S was judged superior in several areas, however. It exhibited brighter and punchier memory colours and sharper fine detailing in highlights. Its metallics and pearlescents were more lustrous. Skin tones were smooth and warm which made them slightly more natural looking than those produced by the Epson model which were comparatively pale.
- Greyscale halftones from both models were photographic-like, with very good depth of field and no graininess. Epson's image had better neutral grey tones and sharper fine detailing and textures in light contrast areas, while Canon's image was slightly dark and hence lacked fine detailing in certain dark areas.

Print Productivity

Advantage ✓	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
First Print Out from Ready State Portrait Printing	✓	
First Print Out from Ready State Retail Poster Printing	=	=
Throughput Speed A1 Portrait Printing		✓
Throughput Speed A1 Retail Poster	=	=
Throughput Speed A0 Portrait Printing	=	=
Throughput Speed A0 Retail Poster	=	=

Productivity evaluation is based on Fast/Speed, Standard/Quality, and High/High Quality modes.

- When printing a single high-resolution portrait from ready state, the Canon GP-4600S scored a faster first-print-out time in two of the three tested speeds; in Standard/Quality mode it was 6.0% faster and 12.0% faster in High/High Quality mode when compared with the Epson model. Both models' speeds were comparable in Fast/Speed mode.
- When printing a single medium-resolution retail poster from ready state, both models' speeds were largely comparable in Fast/Speed mode. In Standard/Quality mode, the Canon GP-4600S was faster by 14.8%, and 11.5% slower in High/High Quality mode when compared with the Epson device.
- In Keypoint Intelligence's A1 high-resolution portrait throughput speed evaluation, the Canon GP-4600S's per-page speed was 12.9% slower in Fast/Speed mode and 5.7% slower in Standard/Quality mode when compared with the Epson model. In High/High Quality, the Canon device had the faster (by 4.4%) per-page speed, with a 10 second speed advantage over the Epson model.

- When printing five copies of a single-page A1-size medium-resolution retail poster test document, both models' per-page speeds were comparable in Fast/Speed mode. In Standard/Quality mode, the Canon GP-4600S's per-page speeds were 12.4% faster, while in High/High Quality it was 17.0% slower when compared with the Epson SC-P8500D.
- In the A0 high-resolution portrait throughput speed evaluation, the Canon GP-4600S's per-page speed was 4.5% faster in Fast/Speed mode and comparable to that of the Epson model in Standard/Quality mode. In High/High Quality, the GP-4600S's per-page speed was twice that of the Epson device.
- When printing five copies of a single-page A0-size medium-resolution retail poster test document, both models' per-page speeds were comparable in Fast/Speed mode. In Standard/Quality mode, the Canon GP-4600S's per-page speeds were 14.2% faster, while in High/High Quality it was 20.9% slower when compared with the Epson SC-P8500D.

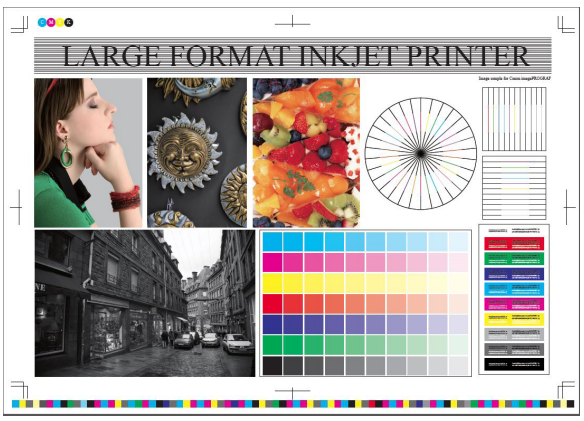
Banner Printing

Advantage ✓	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
Image Quality	✓	
Productivity		✓

Keypoint Intelligence 24" x 70" banner (4,955-KB PDF file)

- Both devices successfully printed the banner in Fast/Speed mode with slight banding visible on output. The Canon GP-4600S took 30.91 seconds to generate a preview at the desktop, and an additional two minutes, 47.24 seconds from preview to final paper cut.
- The Epson SC-P8500D generated a preview in 42.14 seconds and took an additional one minute, 1.31 seconds from preview to final paper cut, making it the more productive device under this scenario.
- We expect such banners to be typically viewed from a distance (which means the impact of the banding is negligible); while both printers offer a unidirectional feature, output from the Epson printer (operating in unidirectional mode) showed slight banding. Output from the Canon printer (without unidirectional printing enabled) also showed slight banding; when the banner was printed with the unidirectional feaure enabled, banding was eliminated with a print time from preview to final paper cut of four minutes, 9.06 seconds.

Ink Consumption



Packaging Proof

Retail Sales Poster

Studio Portrait

Keypoint Intelligence technicians observed that, owing to the vagaries of inkjet technology (for example, head flushing and calibration routines can occur at any time during testing), the same test can produce different results at different times. Although Keypoint Intelligence makes every effort to ensure that devices are tested on a level playing field, the test results should be regarded as an indicator of likely performance and not as a prediction of actual ink consumption in a real-world environment.

Overall Weight of Ink Used (in Grams)

	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
Packaging Proof	100.2	138.8
Retail Sales Poster	82.8	135.9
Studio Portrait	130.3	114.3

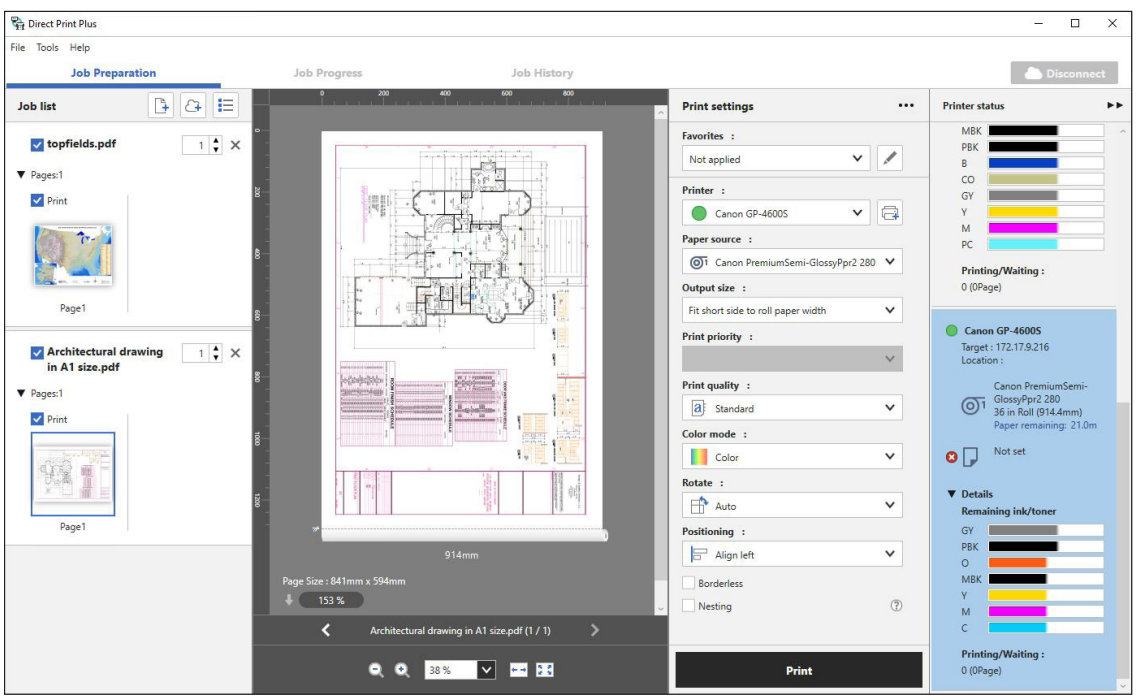
Results are averaged across three sets of 50-page A1 printing in Standard/Quality mode.

- The Canon GP-4600S used 27.8% less ink than the Epson SC-P8500D when printing a Packaging Proof test target on proofing media. This translates to the Canon device using 2.0% of its total available ink, while the Epson model used 6.4%.
- When printing the Retail Sales Poster test target on matte coated media, the Canon unit used 39% less ink compared with the Epson SC-P8500D. For the same print scenario, the Canon GP-4600S used 1.6% of its total available ink, while the Epson model used 6.3%.
- In the Studio portrait ink consumption test conducted using semi-gloss photo media, the Canon GP-4600S used 14.0% more ink compared with the Epson device, which meant it used 2.6% of its total available ink for the test, while the Epson SC-P8500D used 5.3%.

Direct Print Submission Functionality

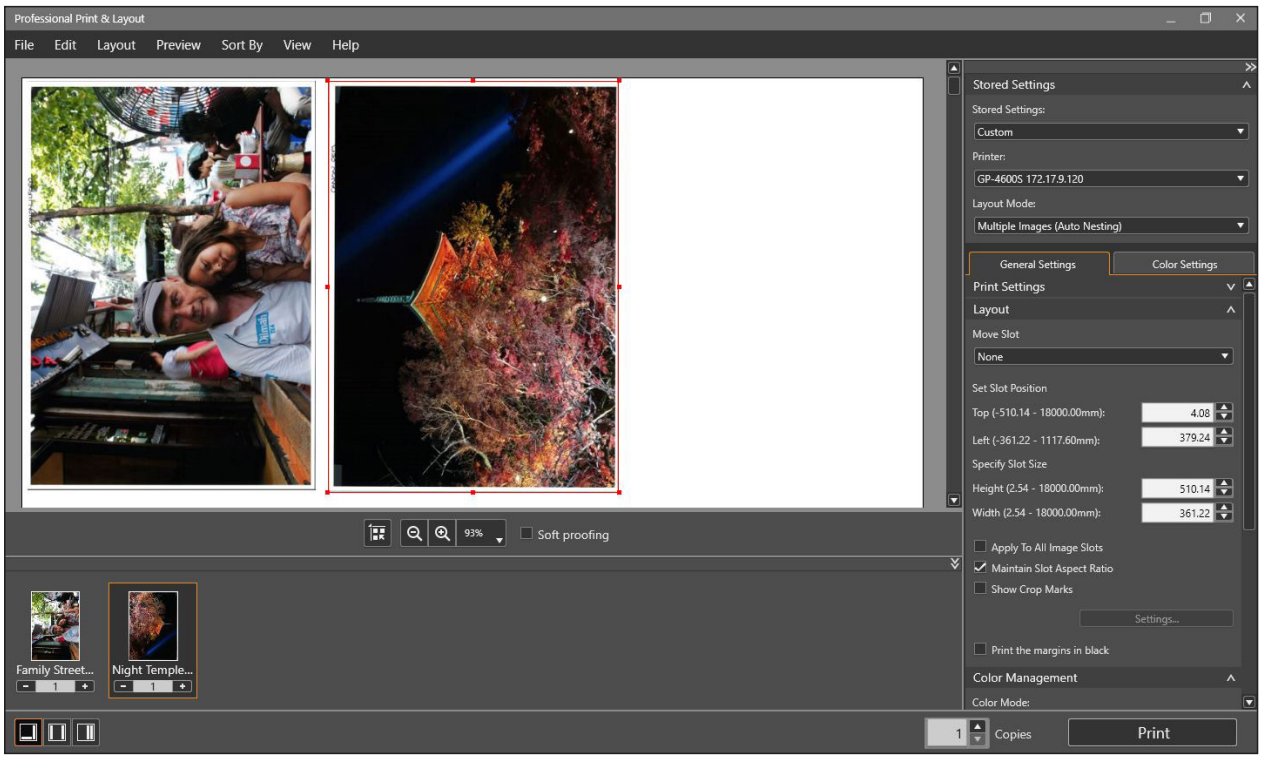
Advantage ✓	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
Ease of Use	=	=
Direct Print Submission Functionality	=	=
Mobile App Integration	=	=

- Canon's Direct Print Plus, featuring a Canon-developed PDF engine, offers a user-friendly interface with improved PDF file processing and printing. Its layout includes three tabs: Job Preparation (the home screen), Job Progress, and Job History. The Job Preparation tab is divided into four sections—Job list, Preview, Print settings, and Printer status—allowing quick access to job settings, previews, and printer status information without the need to link to the Status Monitor. The bidirectional between the utility and the printer means there's less chance of media mismatch.



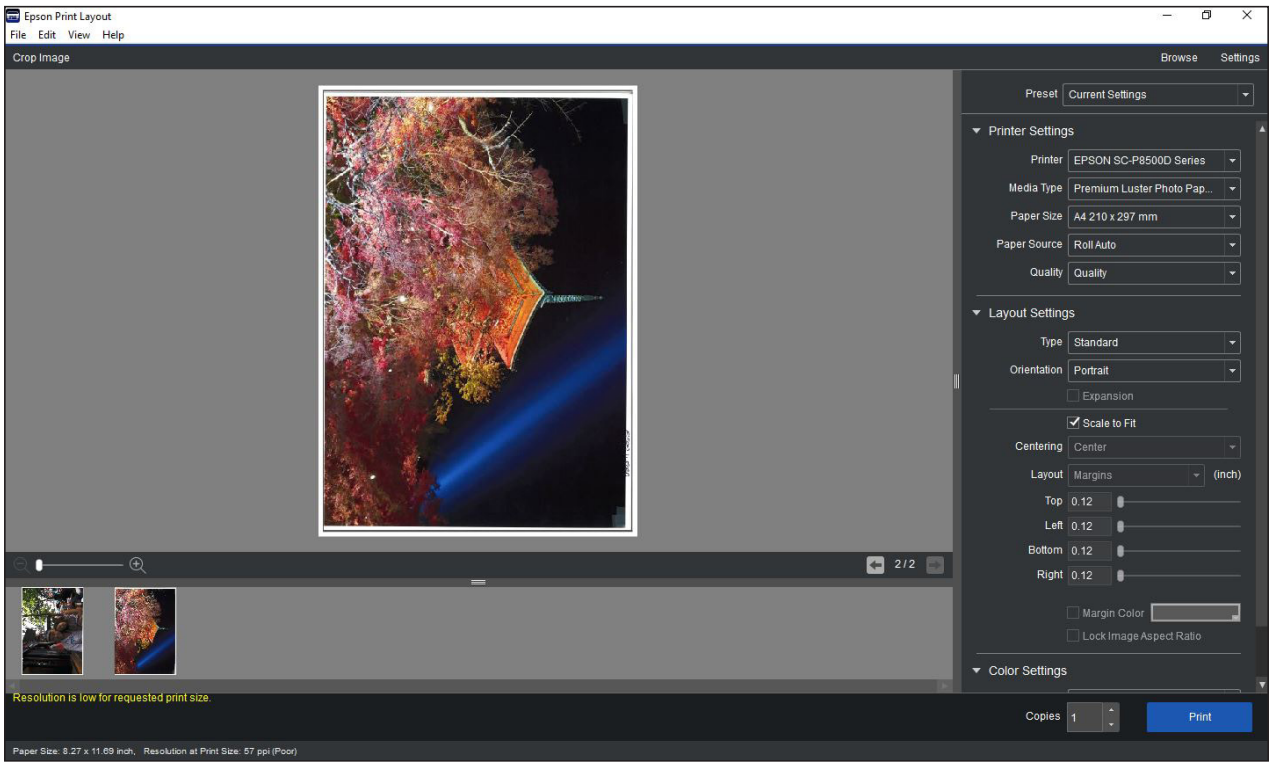
Direct Print Plus job submission software enables the direct printing of PDF, JPEG, TIFF, and HPGL/2 files without the need for native applications or print drivers. From the Job History tab, users can select and reprint jobs using the same settings as when last printed. Job progress indicates how many pages have been printed so far to provide operators with better visibility over the progress of a print job. There is also a link to Canon Accounting Manager to keep track of project costs.

- Direct Print Plus supports 'Shortcut Print' functionality which helps streamline print workflows. Akin to a hot folder workflow, users can create desktop shortcuts that allow drag and drop automatic file printing with predefined print settings. Multiple desktop icons can be created containing different print settings or combinations of print settings.



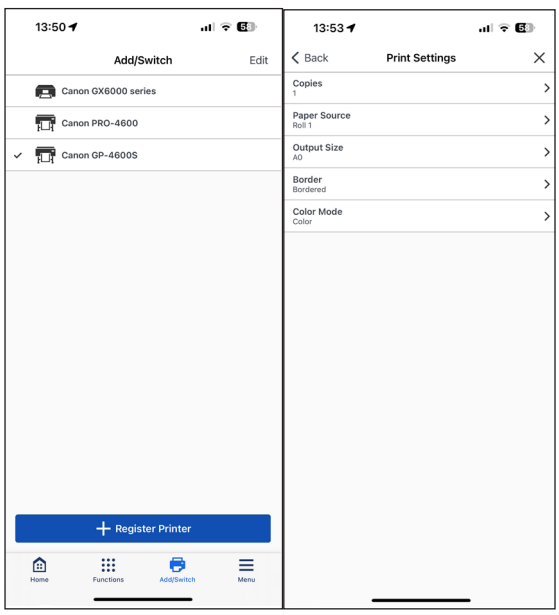
Canon's Professional Print & Layout utility offers an easy-to-use interface. The latest version (V1.4) can automatically retrieve paper type information from the printer.

- Canon's Professional Print & Layout software enables files—even those from different applications—to be scaled, resized, or grouped together as a single job. It features both auto and flexible nesting options for more efficient media use, with the latter allowing users to manually arrange images on a page. Previews, soft proofing, and pattern printing all enable users to check and adjust colour balance, contrast, and brightness. This is done by creating variations with the resulting 'pattern' allowing user to identify and select the desirable value.
- Job setting adjustments include colour management, print quality, image rotation, amongst others. The utility supports plug-in features with various software options designed to appeal to specific segments of the Graphic Arts market, such as photography and fine art display. These include a print plug-in for Photoshop, which, according to Canon, allows users to print 16-bit files directly from Adobe RGB with a wide gamut and clear tonal gradation, as well as a plug-in for DPP (Digital Photo Professional) that includes a 'Digital Lens Optimizer' to improve photographic image quality and enhance depth of field; Adobe Lightroom is also supported.

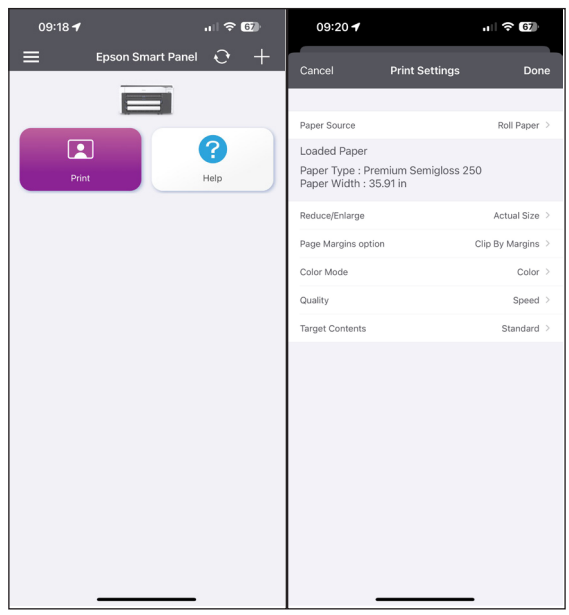


Epson Print Layout provides user friendly job submission procedures and a broad range of job and layout adjustment option.

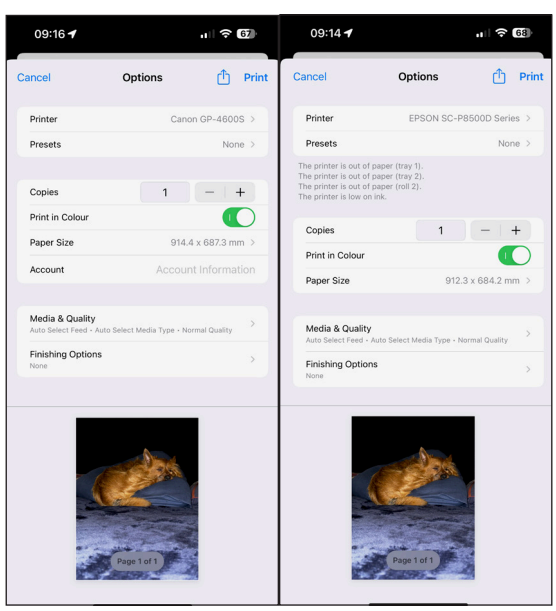
- Epson users can download Epson Print Layout, a free utility, from the vendor's website which enables the direct printing of JPEG and TIFF files. Users can preview print layouts, view thumbnail images of multiple print jobs, and select colour management and print settings directly within the utility. Users can also save job settings as presets (more than 100 presets can be saved) for easy repeat work. The utility has a plug-in function for Adobe Photoshop and Adobe Lightroom, as well as Nikon ViewNX-I, allowing users to preview and print photos directly from Nikon's image hub.
- Both devices offer excellent mobile print support via a proprietary mobile app—Canon PRINT and Epson Smart Panel—making it easy for users to print wirelessly to compatible large-format printers on the same WiFi network. Both apps offer a clean interface and a broad range of print settings. Canon Android users will need to use Canon Print Service app to print from their smart devices; the Epson Smart Panel app is compatible with iOS and Android platforms.
- Both models support mobile printing via AirPrint for added flexibility.



Canon PRINT mobile print app



Epson Smart Panel app

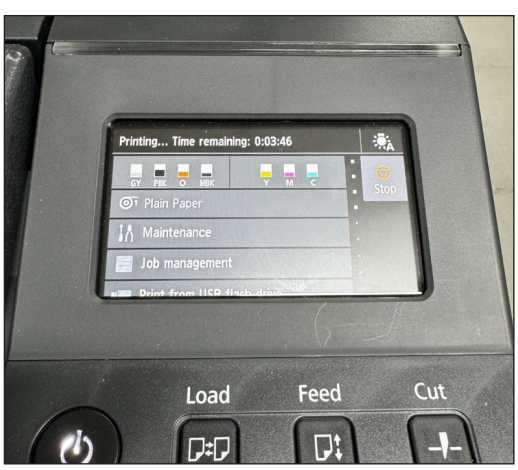


Apple AirPrint settings Canon (left) and Epson (right)

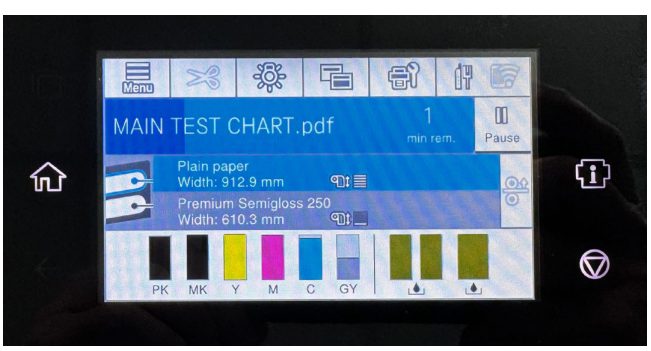
Device Feature Set

- The GP-4600S features a seven-ink set which includes orange, grey, and two black inks. New ink formulation includes wax in the pigment ink, which according to Canon, increases resistance to scratching. The Epson SureColor SC-P8500D uses six inks, including grey and two black inks. Canon has the advantage of allowing ink replacement during operation, reducing downtime. It offers 160/330/700 ml cartridge sizes while the Epson supports 350/700 ml options.
- The Canon unit's ink delivery system dispenses a slightly larger 4-picoliter drop size for all colours versus the Epson ink delivery system (3.5-picoliter for all colours).
- The Canon unit has a user-replaceable printhead, taking less than five minutes to replace with the process initiated on the control panel, whereas the Epson unit's printhead is only service-replaceable (according to the manufacturer it is designed to last the life of printer).
- The Epson SC-P8500D offers simple user maintenance procedures to minimize downtime, with manual printhead and cap cleaning (using swabs to clean gently around the inner edges), and borderless maintenance box replacement. Automatic printhead maintenance is available on both devices.
- The Canon GP-4600S offers a user-friendly, fast media loading process. Its smart roll paper set function allows for automatic media feeding once the roll is secured. As the roll rotates, a proximity sensor detects the edge of the paper and allows the printer to complete the loading process, minimizing user intervention. Built-in sensors identify paper characteristics, including type and thickness, and remember settings for future use, further reducing the need for manual input (in the event of a brand-new media being used for the first time on the device, the operator may need to indicate the media type on the control panel).
- The Epson SC-P8500D offers straightforward media loading process at the front of the device. After raising two spindle lock levers, the user can lift out the entire spindle, remove the media guide edge and slide the new media roll on before reinserting the spindle on the device. The printer will load the paper automatically and the operator must confirm the media type on the control panel to complete the process. Instructions are displayed on the control panel and dynamically update as each step is completed.
- The Canon GP-4600S enhances efficiency with dual sensors that measure, estimate, and display the remaining roll length on its touchscreen. This feature eliminates barcode printing and reading for partially-used rolls, and alerts operators if there's insufficient media to complete a job, reducing the risk of unexpected runouts.
- The Epson SC-P8500D features convenient paper tracking (must be enabled), allowing users to print a media information barcode on a partial roll's edge, indicating remaining length and paper type, which is also displayed on the control panel.
- The GP-4600S's media mismatch feature temporarily holds jobs that require different media than what's loaded, while continuing to print jobs matching the current media; it automatically resumes held jobs once the correct paper is in place. The Epson SC-P8500D's driver signals a mismatch by displaying a warning next to the media selection when an incompatible media type is chosen. On attempting to print, a pop-up window alerts the user about the mismatch, offering options to either cancel the job or proceed despite the discrepancy.
- The Canon GP-4600S supports borderless printing regardless of what media is being used, with a media sensor detecting the edges and automatically adjusting the margin, so there is no ink waste; users can choose free size or three-sided borderless. The Epson SC-P8500D supports borderless printing as well with select media and common media widths.
- Both models support Gigabit Ethernet and wireless connectivity, as well as direct printing of PDF and JPEG files from a USB flash drive, which helps aid document portability.

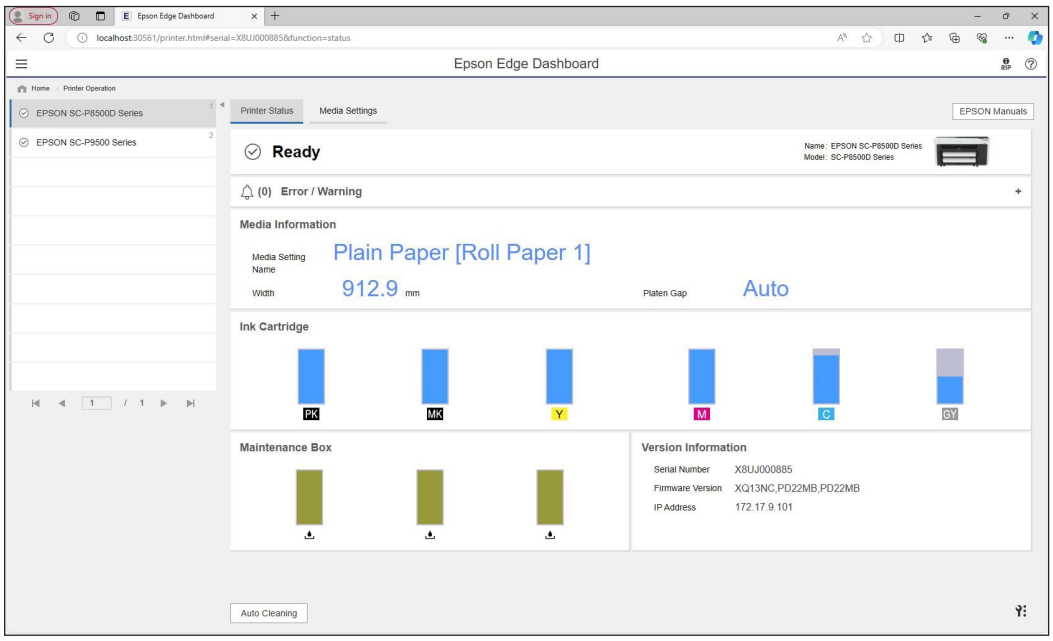
- The Canon GP-4600S comes with a built in self-encrypting 500-GB hard drive, which allows for the storage of commonly used documents and aids spooling workflow; an optional 960-GB SSD hard drive is available with the Epson SC-P8500D.
- Both units offer dual-roll unit configuration (optional with the Canon, standard on the Epson), giving users the added flexibility of switching between different media types or sizes without having to reload the media each time. The units can act as an auto Take-up-Roll unit with bi-directional rewind, which could be an extremely valuable feature in high-volume production environments, enabling large numbers of prints to be conveniently stored on a single roll.
- Both models come with a simple output catch basket which collects prints as they emerge from the device; they work better for single prints or short-run jobs, as multiple sheets can build up on the basket and roll up.
- Both models' interiors can be illuminated (enabled at the control panel), which makes it easy for the user to identify the printing position and the status of the job being printed.
- An optional production stacker can be added to the Epson model (not available with the Canon device), which supports sizes from 8.5 x 11 inch to 33.1 x 46.8 inch, for added convenience.
- Both models feature bright and responsive touchscreens which offer clear menu settings to simplify walk-up operation. From the home screen, operators can readily view printer and consumable status. When the printers are active, the respective displays show the current job's title and remaining print time for the current page, with the Epson also reporting the count of printed pages in the ongoing job; users can navigate menus during operation.
- Cloud-based Epson Edge Dashboard enables Epson users to monitor and view device and consumable status for all networked SureColor devices. It also offers error conditions and allows printhead cleaning and maintenance routines to be performed remotely from the utility.



Canon GP-4600S control panel



Epson SC-P8500D control panel



Epson Edge Dashboard

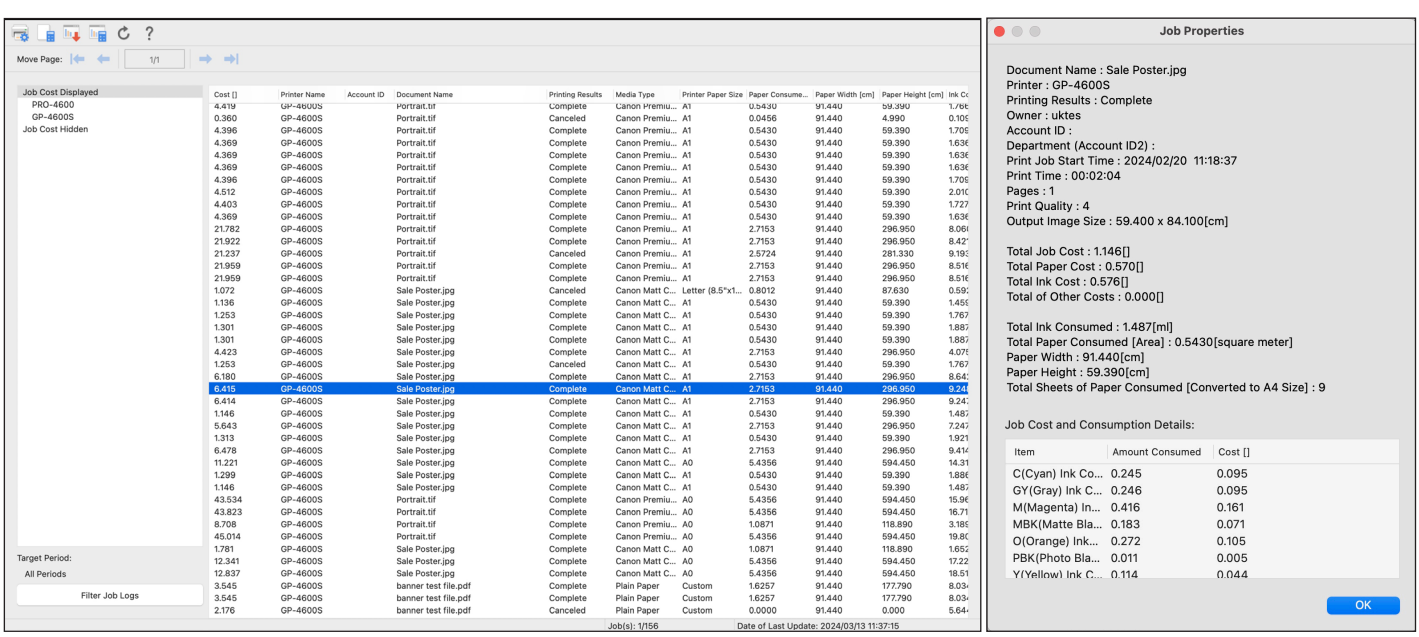
- The Epson model is lighter (155 kg versus 181 kg) than the Canon unit and is designed for compact spaces. There is a jam clearance door at the rear of the device but, as there are casters, it is easy to manoeuvre the device away if it sits flush with a wall.

- The Epson model's rated power consumption while printing is lower—70 watts 94 watts—than that of the Canon model. Similarly, while in standby mode its power consumption is lower (0.3 watts versus GP-4600S's 1.7 watts).

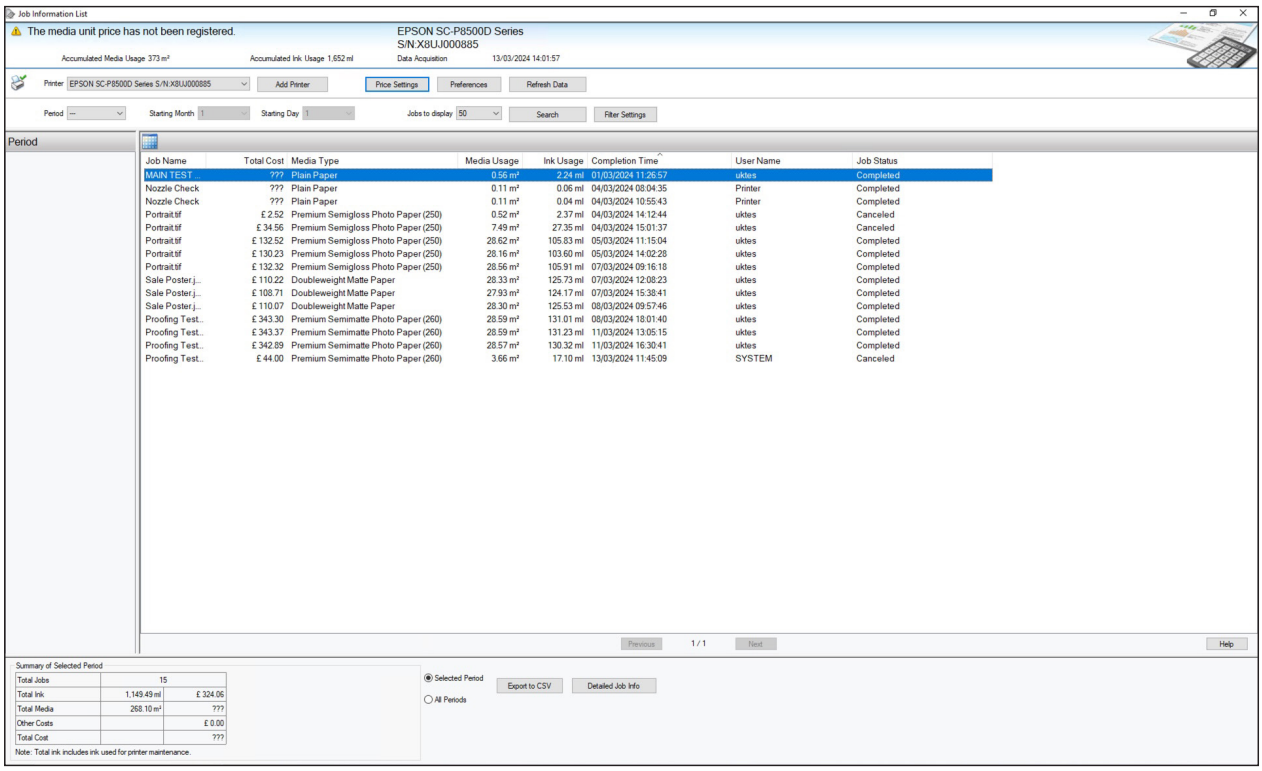
Print Driver Feature Set

- Both models offer a variety of speed settings, although depending on the media type selected, not all speed options will be available.
- The Canon driver includes 62 media profiles versus 29 for the Epson driver. The Epson Media Installer utility (which can be linked via the Utility tab in the printer driver) allows users to create and store additional custom media profiles for use when printing on third-party media or paper that's not supported in the printer driver. Canon's Media Configuration Tool allows for new custom media types to be registered based on custom media information added to the printer, and users can also organize media shown on the control panel or driver, rename and show/hide information.
- The GP-4600S driver features include a watermark capability (not available with the Epson driver), and 16-up maximum printing, with only 2 to 4 multi-up printing supported on the Epson. The Canon is limited to a 2 by 2 poster mode, while the Epson model supports 4 by 4 posters.
- The Canon driver offers page stamping (Date, Time, Name, and Page Number), while the Epson driver offers a much wider range of options, including a wide variety of image quality attributes.
- The Canon driver has a unidirectional printing option, which helps to eliminate banding across output because the printhead travels in only one direction when creating the image. When 'High Speed' feature is disabled in the Epson driver, the Epson SC-P8500D will switch to unidirectional mode.

- Both models' drivers offer a wide range of built-in adjustments for CMY, balance, brightness, and contrast. ICC profile settings are also available with both drivers—in the case of Canon's driver in its Matching tab under Colour Settings. Canon operators can select four modes— Driver Matching, ICC Profile Matching, ICM (and choose one of four rendering methods—perceptual, relative colorimetric, absolute colorimetric or saturation) or Off. The Epson driver offers Driver ICM (Basic or Advanced) and Host ICM, and the same four rendering methods.
- The Canon driver includes the Colour imageRUNNER Enlargement Copy Mode utility, which allows users to integrate a Canon MFP or other scanner with the GP-4600S. Documents scanned by the Canon MFP, or another configured scanner are automatically routed to a hot folder, which is monitored by the GP-4600S driver. The image is then resized and printed, offering a fast, easy-to-use poster creation tool for office users.
- The Canon model offers a plug-in for printing from Microsoft Office applications, which includes useful tools for automatic media resizing, nesting, and borderless printing. Epson offers similar software, Epson Print Plug-in for Office (available as a free download), which adds a 'ribbon' to the Microsoft Office application menu. It offers buttons for fast printing and for printing banners exceeding standard paper sizes in MS Office Word, PowerPoint, and Excel (the latter without banner printing). Epson Print Automate enables users to print a PDF, JPEG, or TIFF file using shortcuts, without opening the application. It enables users to set individual options such as print size, rotation, print quality and number of copies before printing.
- The GP-4600S is compatible with a free Canon Accounting Manager utility. Users can log actual costs for individual inks and media types for cost per job tracking and reporting. Job information on areas including media type, print area, ink used, and total print time is recorded, and more granular cost and consumption details can be obtained by double-clicking on an individual job name or by highlighting a range of different jobs. Job management reports can be exported in .CSV format. Epson offers the free LFP Accounting Tool which automates accounting for SureColor users. In addition to tracking the costs of ink and media, the utility can track ancillary costs such as lamination, labor, and transportation.

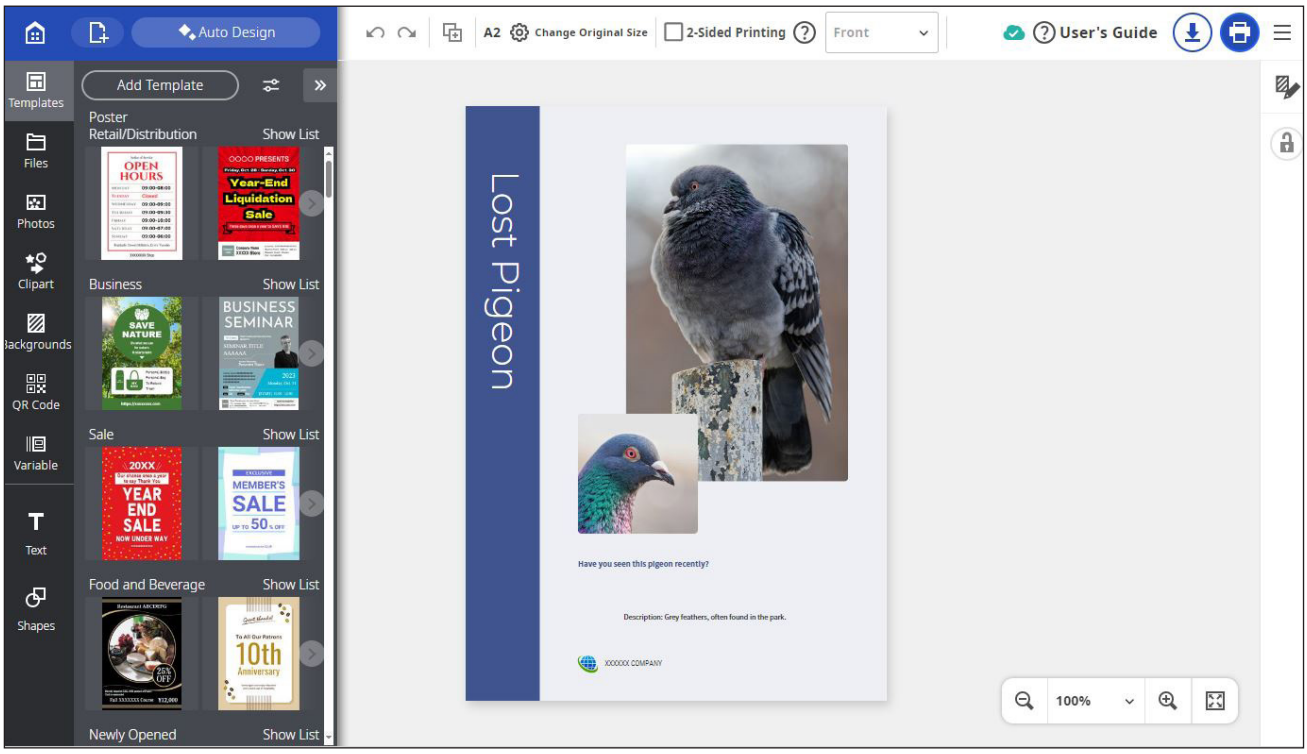


Canon Accounting Manager

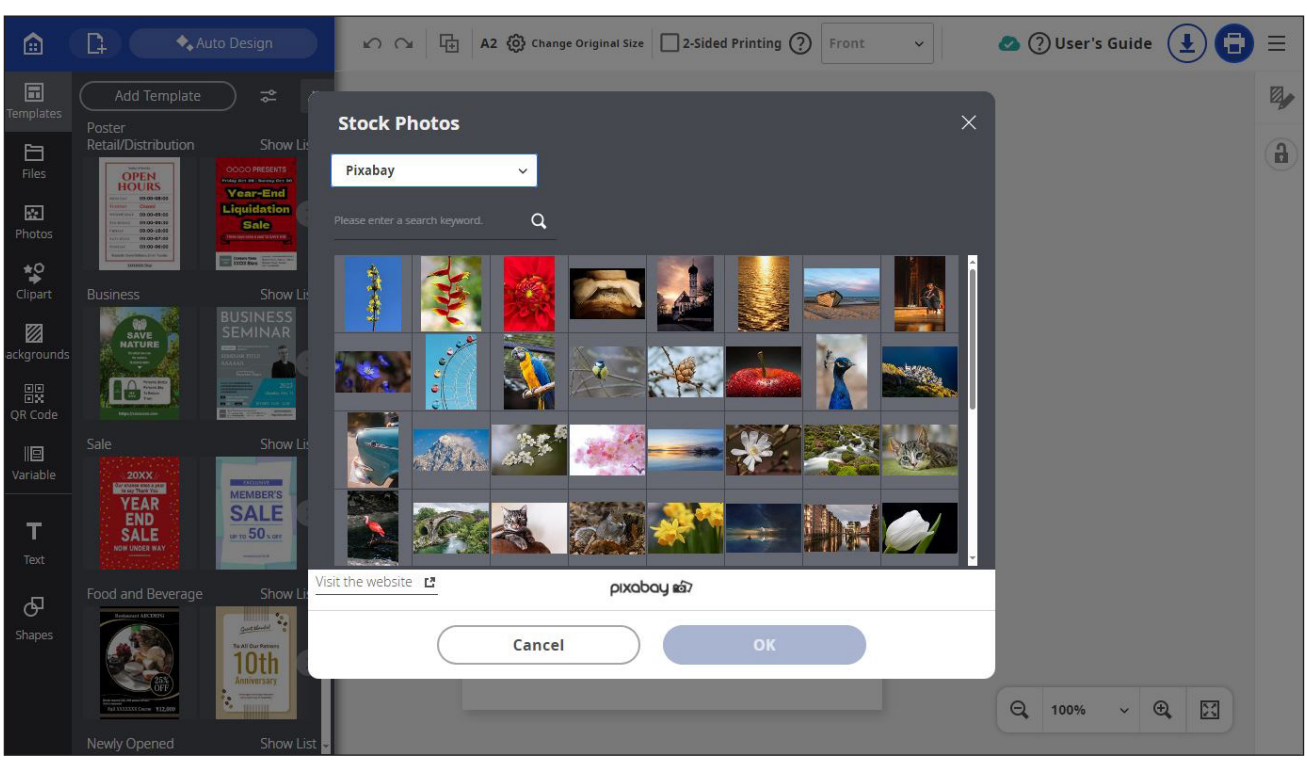


Epson LFP Accounting Tool

- Canon's web-based PosterArtist is a user-friendly tool for creating posters and signage. It provides access to stock photo services like Pixabay, Pexels, and Unsplash, and a wide selection of royalty-free images. The software also offers a variety of pictographic icons and templates sorted by type and event, and supports multi-language poster creation with 900 common expressions across 10 languages.
- Within PosterArtist, users can use Free Layout plus tool enables efficient media use by allowing custom arrangement of files and correct double-sided printing orientation for when folding is required. Epson's Print Layout utility offers resizing options and combines multiple documents for single-layout printing.

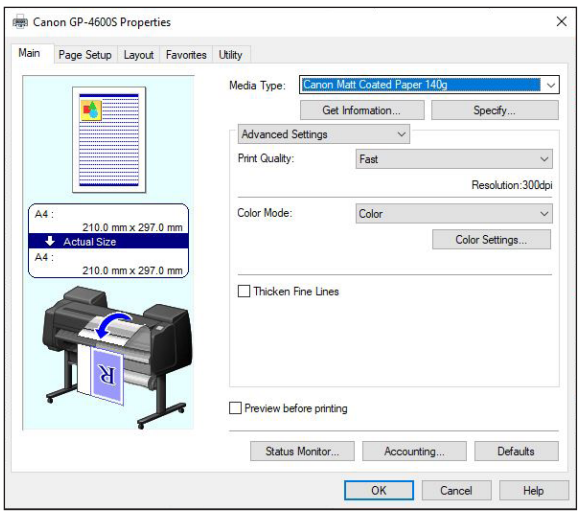


Canon PosterArtist provides a wide range of customizable templates.

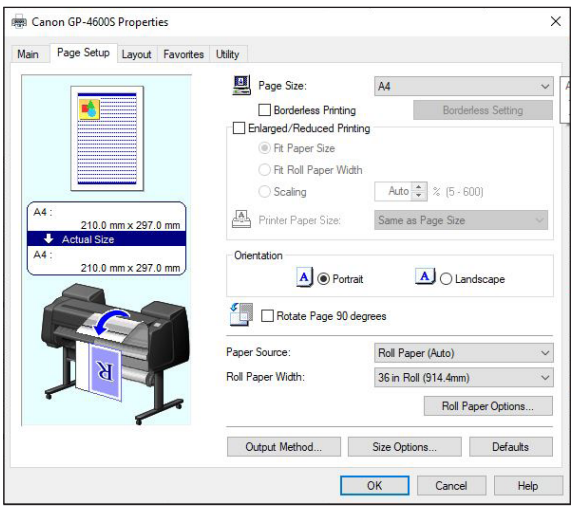


PosterArtist Web integrates with Pixabay, Unsplash, and Pexels photo libraries.

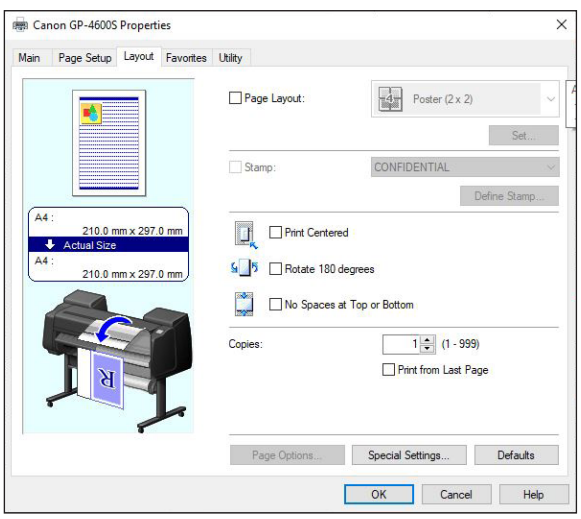
Test Models' Print Driver Screenshots



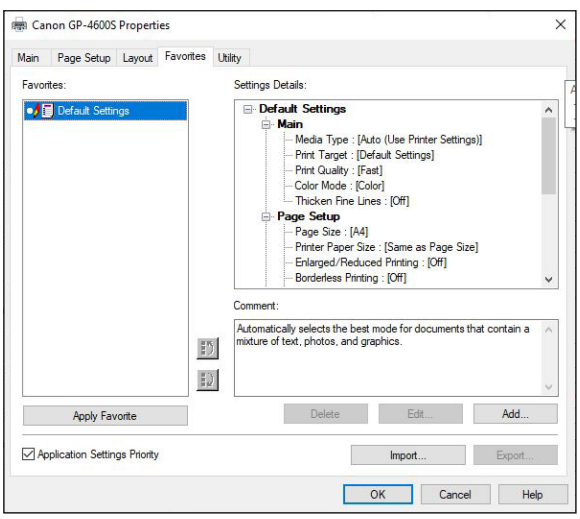
Canon GP-4600S Main tab



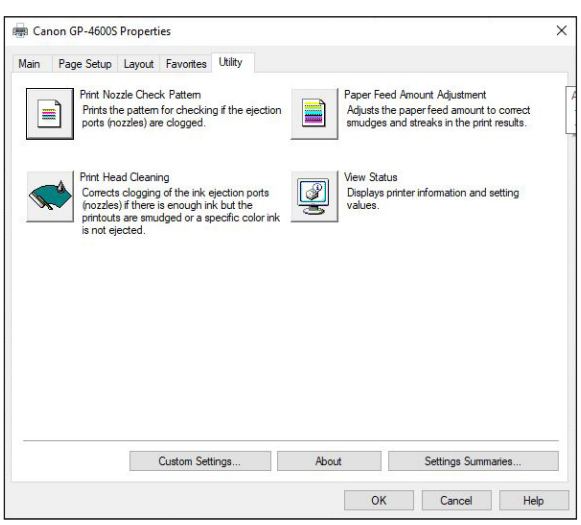
Canon GP-4600S Page Setup tab



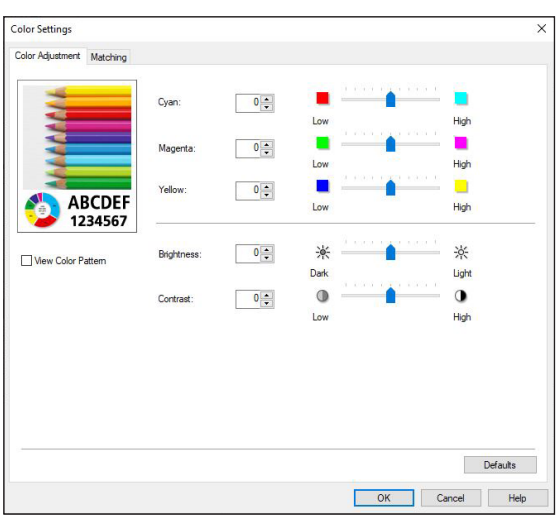
Canon GP-4600S Layout tab



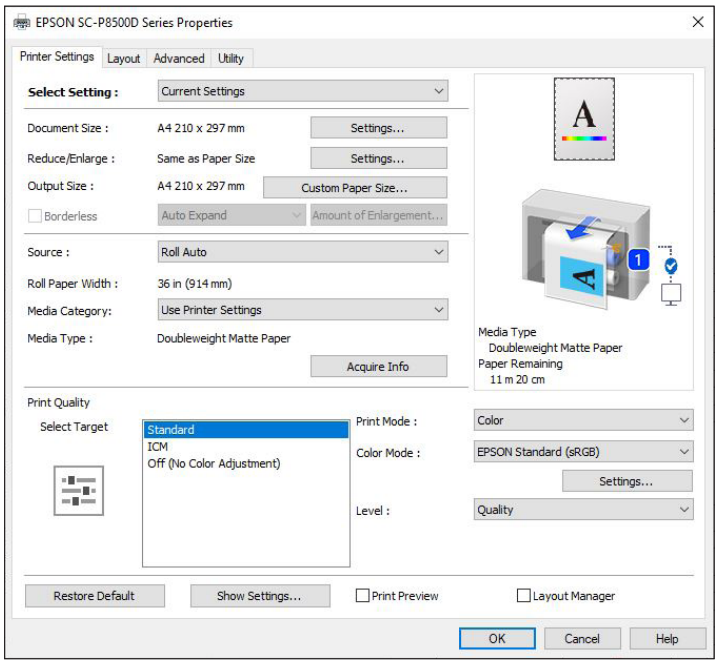
Canon GP-4600S Favourites tab

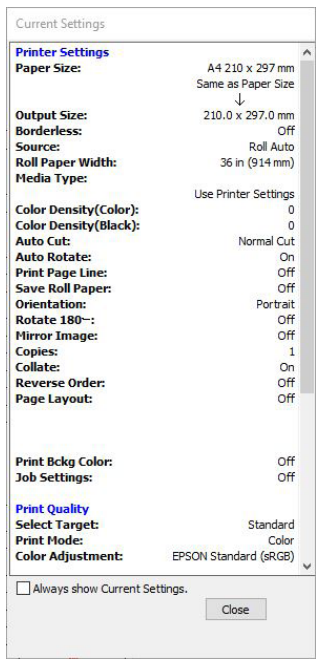


Canon GP-4600S Utilities tab

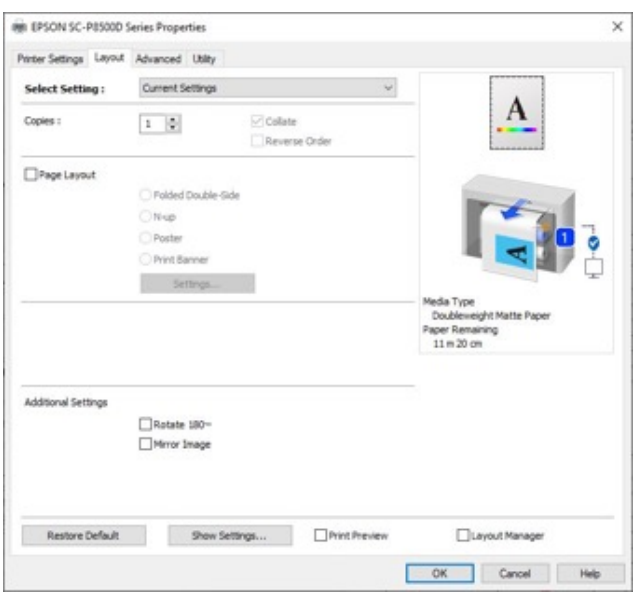


Canon GP-4600S Colour Adjustment Settings tab

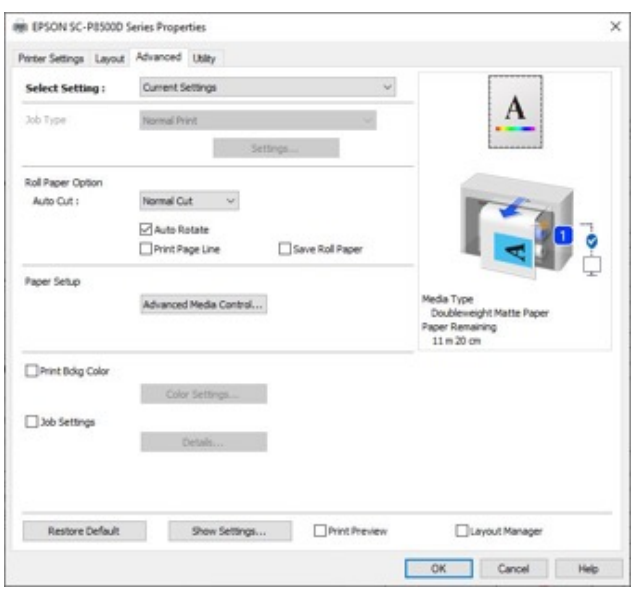




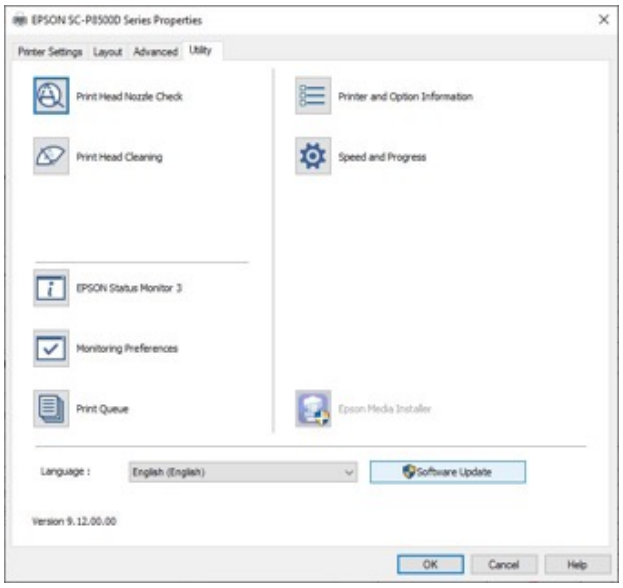
Epson SureColor SC-P8500D Printer Settings Tab with Current Settings



Epson SureColor SC-P8500D Layout Tab



Epson SureColor SC-P8500D Advanced Tab



Epson SureColor SC-P8500D Utility Tab

Epson SureColor SC-P8500D Colour Control Settings

Printhead Reliability and Cleaning Routines

- The Canon GP-4600S offers a printhead nozzle check, accessible through both the control panel and the embedded web page. Set to 'Auto nozzle check' by default, this function automatically monitors the nozzles at specified intervals. Users have the flexibility to set these intervals based on specific page counts. The Epson SC-P8500D, equipped with an Auto Cleaning function, allows users to choose when to perform nozzle checks (during or after printing) and the sensitivity level (Standard or High). Nozzle checks can be initiated from both the printer driver and the control panel.
- The Canon offers an Ink Ejection Status check feature which can be set to Auto Fix, Display Warning, or Off. This is a newly developed ink sensing system designed to monitor ink ejection status, helping to prevent any deterioration in image quality.
- When detecting a clogged nozzle, the Canon printer automatically pauses, runs a cleaning cycle, and resumes printing once complete, requiring no user intervention. Similarly, the Epson printer, if set to Auto Cleaning, will conduct a printhead clean procedure upon detecting a clogged nozzle.
- For image quality issues, Canon users can initiate printhead cleaning cycles from the desktop or control panel, offering three levels: Cleaning (4 minutes), Deep Cleaning (4 minutes), and System Cleaning (up to 13 minutes). The latter (with standard and short options) is recommended if initial cleanings don't resolve nozzle clogs, with the choice to clean all colours or specific ink groups. Epson users have a 'Wiping the Printhead' option for choosing chips (pairs of colours) for cleaning, with the maintenance duration displayed on the control panel. For more thorough cleaning, a Power clean option is available, targeting different pairs of colours.
- A standard cleaning cycle performed on the Canon model takes approximately four minutes, 1 second on average to complete, whilst on the Epson model, a cleaning cycle lasts seven minutes, 27 seconds.
- After both devices were turned off over the course of a weekend, upon restarting the following Monday, they had no issues with clogged nozzles and printed a nozzle check pattern perfectly.

Supporting Test Data

Productivity

Colour Throughput Time – A1 High-Resolution Portrait Printing (in Seconds)

	Fast/Speed	Standard/Quality	High/High Quality
Canon imagePROGRAF GP-4600S	124.00	188.95	217.50
Epson SureColor SC-P8500D	109.84	178.83	227.57

A single-page high-resolution A1 portrait was printed as a five-page job using the device driver set to the semi-gloss photo/colour setting. The Epson driver's Black Enhance Overcoat option was also enabled. Both devices were loaded with 36" rolls, with each job set to auto-rotate to save media. The time indicated is the average number of seconds (based on timing from the cutting of the first page to the cutting of the final page and dividing by four to exclude the initial processing time).

Colour Throughput Time – A1 Medium-Resolution Portrait Printing (in Seconds)

	Fast/Speed	Standard/Quality	High/High Quality
Canon imagePROGRAF GP-4600S	51.38	88.76	190.80
Epson SureColor SC-P8500D	53.28	101.31	163.05

A single-page medium-resolution A1 portrait was printed as a five-page job using the device driver set to the matte coated/colour setting. The Epson driver's Black Enhance Overcoat option was also enabled. Both devices were loaded with 36" rolls, with each job set to auto-rotate to save media. The time indicated is the average number of seconds (based on timing from the cutting of the first page to the cutting of the final page and dividing by four to exclude the initial processing time).

Colour Throughput Time – A0 High-Resolution Portrait Printing (in Seconds)

	Fast/Speed	Standard/Quality	High/High Quality
Canon imagePROGRAF GP-4600S	202.60	352.65	989.68
Epson SureColor SC-P8500D	212.12	347.76	450.42

A single-page high-resolution A0 portrait was printed as a five-page job using the device driver set to the semi-gloss photo/colour setting. The Epson driver's Black Enhance Overcoat option was also enabled. Both devices were loaded with 36" rolls, with each job set to auto-rotate to save media. The time indicated is the average number of seconds (based on timing from the cutting of the first page to the cutting of the final page and dividing by four to exclude the initial processing time).

Colour Throughput Time – A0 Medium-Resolution Portrait Printing (in Seconds)

	Fast/Speed	Standard/Quality	High/High Quality
Canon imagePROGRAF GP-4600S	100.05	170.60	393.23
Epson SureColor SC-P8500D	103.19	198.92	325.12

A single-page medium-resolution A0 portrait was printed as a five-page job using the device driver set to the matte coated/colour setting. The Epson driver's Black Enhance Overcoat option was also enabled. Both devices were loaded with 36" rolls, with each job set to auto-rotate to save media. The time indicated is the average number of seconds (based on timing from the cutting of the first page to the cutting of the final page and dividing by four to exclude the initial processing time).

First-Print-Out Time from Ready State – High-Resolution Portrait Printing (in Seconds)

	Canon image-PROGRAF GP-4600S	Epson SureColor SC-P8500D	Canon image-PROGRAF GP-4600S	Epson SureColor SC-P8500D	Canon image-PROGRAF GP-4600S	Epson SureColor SC-P8500D
	Fast	Speed	Standard	Quality	High	High Quality
Time Before Printing Commences	22.04	16.74	22.59	16.71	21.88	16.79
First Print Out Time	126.48	125.70	188.68	200.68	220.11	250.21

First-page-out times are determined by sending an A1 high-resolution portrait PDF file to print, timed from job release to page out, with both Canon and Epson drivers set to semi-gloss photo media. The Epson driver's Black Enhance Overcoat option was also enabled. Both devices were loaded with 36" rolls.

First-Print-Out Time from Ready State – Medium-Resolution Retail Poster Printing (in Seconds)

	Canon image-PROGRAF GP-4600S	Epson SureColor SC-P8500D	Canon image-PROGRAF GP-4600S	Epson SureColor SC-P8500D	Canon image-PROGRAF GP-4600S	Epson SureColor SC-P8500D
	Fast	Speed	Standard	Quality	High	High Quality
Time Before Printing Commences	19.92	16.65	20.62	15.68	21.53	14.55
First Print Out Time	61.03	65.80	97.05	113.90	202.00	181.13

First-print-out times are achieved by sending an A1 medium-resolution retail sales poster PDF file to print, timed from job release to page out with both Canon and Epson drivers set to matte coated media. Both devices were loaded with 36" rolls.

Colour Print Quality

Colour Optical Density Evaluation

Canon imagePROGRAF GP-4600S						
	Highest					
	1	2	3	4	Max.	Min.
Cyan	2.15	2.15	2.18	2.13	2.18	2.13
Magenta	1.89	1.88	1.88	1.88	1.89	1.88
Yellow	1.38	1.37	1.37	1.39	1.39	1.37
Black	2.22	2.21	2.22	2.23	2.23	2.21

Epson SureColor SC-P8500D						
	Max Quality					
	1	2	3	4	Max.	Min.
Cyan	1.45	1.40	1.47	1.43	1.47	1.40
Magenta	1.17	1.18	1.19	1.20	1.20	1.17
Yellow	1.41	1.43	1.42	1.43	1.43	1.41
Black	2.47	2.47	2.45	2.45	2.47	2.45

Note: Colour density readings were assessed by printing a Keypoint Intelligence proprietary PDF test target on proofing paper at the respective Highest/Max Quality driver settings, with no colour correction. Density was measured with an XRite exact^{Xp} densitometer.

Skin Tone and Neutral Grey Consistency

	Skin Tone 1 (Formula: C=6, M=15, Y=16, K=0)	
	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
Colour block		
2	0.11	0.10
3	0.42	0.25
4	0.21	0.10
5	0.11	0.11
6	0.46	0.17
7	0.25	0.33
8	0.11	0.22
9	0.14	0.21
Max. Delta E Variance	**0.35**	**0.23**

	Skin Tone 2 (Formula: C=30, M=63, Y=75,K=0)	
	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
Colour block		
2	0.24	0.44
3	0.02	0.22
4	0.28	0.21
5	0.20	0.50
6	0.04	0.20
7	0.11	0.35
8	0.29	0.53
9	0.34	0.39
Max. Delta E Variance	**0.32**	**0.33**

	Skin Tone 3 (Formula: C=19, M=33, Y=50, K=0)	
	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
Colour block		
2	0.36	0.32
3	0.27	0.25
4	0.41	0.23
5	0.43	0.74
6	0.33	0.59
7	0.45	0.46
8	0.08	0.86
9	0.27	0.78
Max. Delta E Variance	**0.37**	**0.63**

	Neutral Grey	
	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
Colour block		
2	0.72	0.08
3	0.18	0.24
4	0.58	0.11
5	0.61	0.39
6	0.17	0.29
7	0.86	0.24
8	0.78	0.46
9	0.57	0.48
Max. Delta E Variance	**0.69**	**0.40**

Note: Skin tone and neutral grey consistency measurements are based on nine readings taken from a Keypoint Intelligence proprietary PDF test target file comprising four A1-sized solid coverage documents of three skin tones and a neutral grey with the Highest/Max Quality setting selected in the driver and the target printed on the manufacturer's own brand of proofing semi-gloss media, with no colour correction. Colour differences across the A1 image were measured comparing eight locations to that of the colour measured at the top left of the page, using an EFI ES1000 colour spectrophotometer and Gretag MacBeth EyeOne Share colour comparison software.

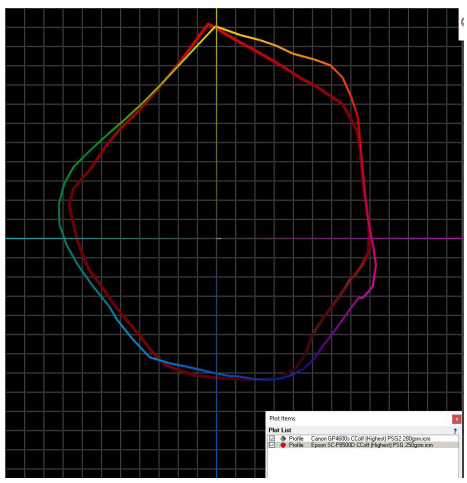
FOGRA 39 Drift Test

Comparison of FOGRA39 colour patches before and after ink consumption test

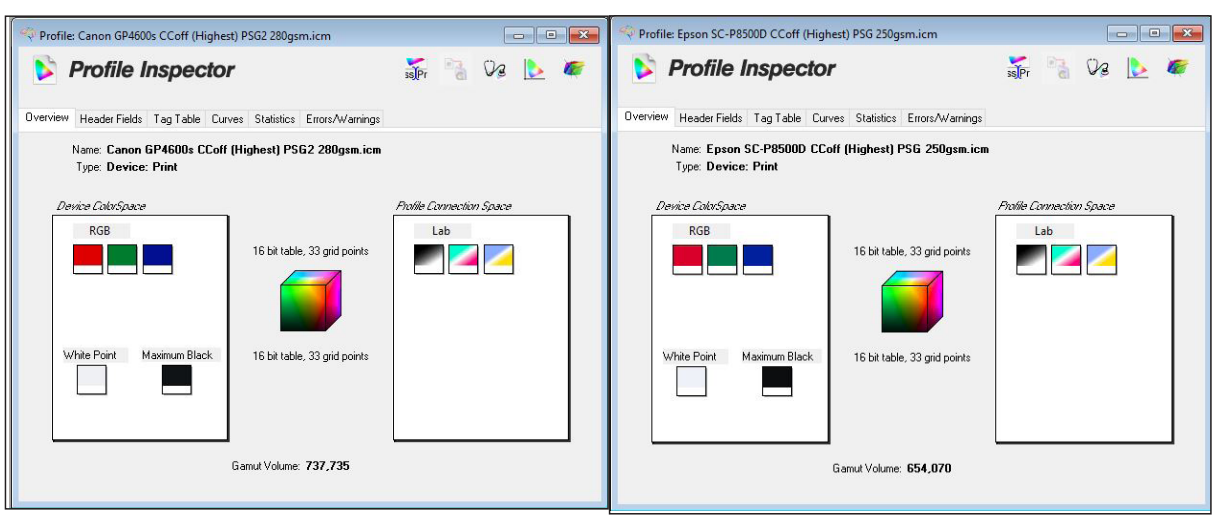
	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D
Delta E Drift	0.3	0.5

Colour Gamut Cubic L*a*b Unit Volume Comparison

Media Type/Settings	Canon imagePROGRAF GP-4600S	Epson SureColor SC-P8500D	Canon % larger/smaller (-) than Epson
Premium Semi-Gloss Photo Paper Highest/Max Quality	737,735	654,070	12.8%



Canon imagePROGRAF GP-4600S colour gamut (shown chromatically) on semi-gloss photo paper in Highest mode with colour correction disabled versus Epson SureColor SC-P8500D colour gamut (red) on semi-gloss photo paper in Max Quality mode with colour adjustment disabled.



Colour gamut profile for Canon imagePROGRAF GP-4600S (left) and Epson SureColor SC-P8500D (right) on semi-gloss photo paper in highest-quality mode.

Device Feature Set

	Canon imagePROGRAF GP-4600S	Advantage ✓		Epson SureColor SC-P8500D
Max. print resolution	2400 x 1200 dpi			2400 x 1200 dpi
Number of inks	7 (MBK, PBK, C, M, Y, GY, PGY, O)	✓		6 (C, M, Y, GY, PBK, MBK)
Ink tanks replaceable during operation	Yes	✓		No
Ink-drop size	Minimum 4 picoliter		✓	Minimum 3.5 picoliter (variable)
Starter cartridge ink capacity	330 ml bundled starter ink per colour			INA
Ink cartridge capacity	160 ml, 330 ml, and 700 ml (all colours)			350 ml and 700 ml (all colours)
Number of nozzles	18,432 nozzles in total (MBK, C, M, Y, O: 1,536 x 2 channels; PBK, GY: 1,536 nozzles x 1 channel)	✓		9,600 nozzles in total (400 nozzles x 24 channels)
Number of printheads	1			1
Printhead replacement	User replaceable	✓		Service replaceable
Line accuracy	+/-0.1% or less			INA
Minimum line width	INA			INA
Minimum print margins	Roll paper: Borderless or 3 mm (all sides); Cut sheet: 3 mm (Top, Side), 12.7 mm (Bottom)			Borderless or 3 mm (top, bottom), 0 mm (sides); Cut sheet: 3 mm (top), 12.7 mm (bottom), 0 mm (sides)
Borderless (0 mm) printing	Yes, recommended sizes and free size borderless printing support on roll paper by user definition			Yes, with select media and sizes
Maximum outside diameter of roll paper	170 mm			170 mm
Maximum printable paper roll length	Roll: 18 m (varies according to the OS, RIP, and application used)		✓	91 m
Maximum printable cut-sheet media length	1.6 m			INA
Maximum media thickness	Roll/cut: 0.07-0.8 mm			Roll/cut: 0.07-0.8 mm
Maximum media width	44"			44"
Media loading	One roll: Upper loading; added roll: front loading			Front loading
Roll paper	Optional multifunction roll system (dual roll and/or bi-directional auto Take up configuration)		✓	Dual Roll/Auto Take Up Reel Unit (standard)
Optional media handling	Roll holder set (supports 2" and 3" media cores)			Roll feed spindle (supports and 2" and 3" media core)
Standard RAM	3 GB			INA
Maximum RAM	3 GB			INA

Hard drive	Standard self-encrypting 500-GB	✓		Optional 960-GB SSD
Interface	Hi Speed USB; 10/100Base-TX/1000Base-T/TX; Wireless LAN: 802.2.11 b/g/n			Super Speed USB; 100Base-TX/1000Base-T/TX; IEEE 802.2.11 b/g/n/ac
PDL	SG Raster; PDF Ver. 1.7; JPEG (Ver. JFIF 1.02)			ESC/P-R; HP-GL/2; HP RTL; Adobe PostScript; PDF 1.7
Net weight (unpacked) and size	181 kg 1,593 x 984 x 1,168 mm (W x D x H; basket open)		✓	155 kg 1,848 x 829 x 975 mm (W x D x H; printing)
Power consumption when in standby	1.7 W or less (using wired LAN)		✓	0.3 W
Power consumption when active	94 W or less (using wired LAN)		✓	70 W
Acoustic pressure	Operation: 49 dB (A) or less		✓	Operation: 46 dB (A)
Acoustic power	Operation: 6.6 Bels			Operation: 6.4 Bels

INA – Information not available

Driver Feature Set

	Canon imagePROGRAF GP-4600S	Advantage ✓		Epson SureColor SC-P8500D
Speed settings	Fast, Standard, High, and Custom (with various settings depending on media selection)			Speed, Quality, High Quality, Max Quality, and Quality Options (with various settings from Speed to Quality available)
Economy mode	Yes (Custom Fast)			Yes (High Speed)
Predefined profiles	4 available under Easy Settings: Default; Photo (Color); Poster; Custom	✓		Ability to program profiles
Overview of profile settings provided	Yes			Yes
Media profiles	62 plus 10 custom profiles	✓		29 plus Epson Media Installer
IQ optimized for various types of output	Yes			Yes
Watermark	Yes	✓		No
Sharpen text	No		✓	Yes (called Finest Detail)
Thicken fine lines	Yes			Yes (called Finest Detail)
Mirror image	Yes			Yes
Multi-up printing	Yes (2 to 16)	✓		Yes (2 to 4)
Poster print mode	Yes (2 by 2)		✓	Yes (4 by 4)

Page stamping	Yes (Under Layout and Page Options: Date, Time, Username, Page Number)		✓	Yes (Under Advanced and Job Setting: Document Name, Username, Printer Name, Free Text Field, Media Type, Print Quality Level, Level, Print Mode, High Speed, Finest Detail, Edge Smoothing, Colour Adjustment, Colour Adj. Value, Colour Density)
Image rotation	Yes, 90 degrees and 180 degrees			Yes, Auto and 180 degrees
Option to preview before print	Yes			Yes
Link to device web server from driver	Yes (via link to Status Monitor)	✓		No (there is a link to Epson Status Monitor 3)
CMYK balance adjustment	Yes (CMY only)			Yes (CMY only)
Brightness adjustment	Yes			Yes
Contrast adjustment	Yes			Yes
Saturation adjustment	No		✓	Yes
Advanced colour management options	Yes			Yes
Enlargement Copy Mode	Yes			Yes
Free Layout Capability	Yes (flexible placement)			Yes (flexible placement via Layout Manager)
MS Office Plug-in	Yes			Yes
Adobe Photoshop Plug-in*	Yes			Yes
Accounting Capability	Yes			Yes
Disable automatic cutter	Yes			Yes
Unidirectional printing selection option	Yes			Yes (when the 'High Speed' feature is disabled)
Integration with MFP	Yes			INA

* The Canon GP-4600S supports PosterArtist Web and Professional Print & Layout (PPL) v.1.4 workflow software, which is designed to accentuate details in highlight areas and make in-focus areas stand out. It can be used as a standalone RIP or as an export module from industry-standard editing and graphics software such as Adobe Photoshop, Adobe Lightroom, as well as Canon Digital Photo Professional. The Epson unit supports Epson Print Layout which has a plug-in function for Adobe Photoshop and Adobe Lightroom, as well as Nikon ViewNX-I, Nikon NX Studio, and SILKYPIX.

Ink Consumption

Table 1: Amount of Ink in Each Canon imagePROGRAF GP-4600S 700-ml Cartridge (in Grams)

	GY	PBK	O	MBK	Y	M	C
Weight of cartridge prior to installation	930.7	924.4	921.8	942.3	921.1	924.9	920.8
Weight of cartridge at end of life	207.4	207.4	207.4	207.4	207.4	207.4	207.4
Net weight of ink	723.3	717.0	714.4	734.9	713.7	717.5	713.4
Total ink weight across seven cartridges							**5,034.2**

Table 2: Approximate Amount of Ink in Each Epson SureColor SC-P8500D 350-ml Cartridge (in Grams)

	PBK	MBK	Y	M	C	GY
Weight of cartridge prior to installation	499.9	503.2	496.6	510.2	494.5	493.4
Weight of cartridge at end of life	137.5	137.5	137.5	137.5	137.5	137.5
Net weight of ink	362.4	365.7	359.1	372.7	357.0	355.9
Total ink weight across six cartridges						**2,172.8**

Table 3: Ink Used in Three 50-Page Runs of Packaging Proof Test Document (Standard Mode) on the Canon imagePROGRAF GP-4600S (in Grams)

	GY	PBK	O	MBK	Y	M	C
Test Run 1 Net weight of ink used	27.1	19.1	12.0	9.9	5.7	16.4	9.3
Test Run 2 Net weight of ink used	27.2	18.6	14.2	10.4	6.1	15.1	9.6
Test Run 3 Net weight of ink used	27.8	18.6	12.0	9.8	6.4	15.9	9.4
Average amount of ink used across three runs	27.4	18.8	12.7	10.0	6.1	15.8	9.4
Total ink weight across seven cartridges for 50-page run (based on averages)							**100.2**

Table 4: Ink Used in Three 50-Page Runs of Packaging Proof Test Document (Quality Mode) on the Epson SureColor SC-P8500D (in Grams)

	PBK	MBK	Y	M	C	GY
Test Run 1 Net weight of ink used	45.3	2.4	13.4	21.4	12.2	42.2
Test Run 2 Net weight of ink used	47.1	2.3	14.2	21.9	12.4	42.9
Test Run 3 Net weight of ink used	46.5	2.0	13.7	21.6	12.5	42.2
Average amount of ink used across three runs	46.3	2.3	13.8	21.6	12.4	42.4
Total ink weight across six cartridges (based on averages)						**138.8**

Table 5: Ink Used in Three 50-Page Runs of Retail Sales Poster Test Document (Standard mode) on the Canon imagePROGRAF GP-4600S (in Grams)

	GY	PBK	O	MBK	Y	M	C
Test Run 1 Net weight of ink used	21.7	7.5	13.1	10.1	8.4	14.8	8.4
Test Run 2 Net weight of ink used	20.7	7.8	12.5	9.3	8.3	14.6	9.4
Test Run 3 Net weight of ink used	21.2	7.3	12.4	9.0	8.4	14.7	8.4
Average amount of ink used across three runs	21.2	7.5	12.7	9.5	8.4	14.7	8.8
Total ink weight across seven cartridges for 50-page run (based on averages)							**82.8**

Table 6: Ink Used in Three 50-Page Runs of Retail Sales Poster Test Document (Quality Mode) on the Epson SureColor SC-P8500D (in Grams)

	PBK	MBK	Y	M	C	GY
Test Run 1 Net weight of ink used	2.4	5.5	12.4	37.6	12.1	66.3
Test Run 2 Net weight of ink used	1.1	5.9	12.5	37.4	11.5	66.2
Test Run 3 Net weight of ink used	1.4	5.5	13.4	38.9	12.5	65.3
Average amount of ink used across three runs	1.6	5.6	12.8	38.0	12.0	65.9
Total ink weight across six cartridges (based on averages)						**135.9**

Table 7: Ink Used in Three 50-Page Runs of Studio Portrait Test Document (Standard mode) on the Canon imagePROGRAF GP-4600S (in Grams)

	GY	PBK	O	MBK	Y	M	C
Test Run 1 Net weight of ink used	45.7	14.2	11.8	12.8	14.3	15.0	15.9
Test Run 2 Net weight of ink used	45.0	14.6	12.4	12.0	14.6	15.3	15.6
Test Run 3 Net weight of ink used	47.6	14.2	13.7	12.0	14.6	15.7	13.8
Average amount of ink used across three runs	46.2	14.3	12.6	12.3	14.5	15.3	15.1
Total ink weight across seven cartridges for 50-page run (based on averages)							**130.3**

Table 8: Ink Used in Three 50-Page Runs of Studio Portrait Test Document (Quality mode) on the Epson SureColor SC-P8500D (in Grams)

	PBK	MBK	Y	M	C	GY
Test Run 1 Net weight of ink used	30.3	2.6	7.1	9.5	8.6	59.7
Test Run 2 Net weight of ink used	30.5	2.3	5.5	8.5	6.9	58.0
Test Run 3 Net weight of ink used	30.4	1.6	5.9	9.0	7.8	58.5
Average amount of ink used across three runs	30.4	2.2	6.2	9.0	7.8	58.7
Total ink weight across six cartridges (based on averages)						**114.3**

Test Methodology

Ink Consumption: Keypoint Intelligence analyzed ink consumption using three different document types: a PDF-formatted Packaging Proof, a Retail Sales Poster (jpg), and a Studio Portrait (tiff), all sized at ISO A1.

In Keypoint Intelligence's lab, the Canon imagePROGRAF GP-4600S, with the latest "01.00" firmware (as of February 2024) was connected to a Windows 10 workstation via a 1000BaseT TCP/IP connection and maintained in default configuration for testing. Using the Canon imagePROGRAF Printer Driver in its default colour settings, the Packaging Proof was printed on Canon medium weight proofing media, the Retail Poster on 140gsm matte coated media, and the Studio Portrait on 280gsm semi-gloss photo media, all in Standard mode.

The Epson SureColor SC-P8500D was installed with the latest "06.08.XQ13NC" level of firmware (as of February 2024) and connected to a Windows 10 workstation via a 1000BaseT TCP/IP connection and maintained in default configuration for testing. Using the Epson ESC/P-R driver in default colour settings, the Packaging Proof document was printed on proofing paper commercial media, the Retail Poster on doubleweight matte coated media, and the Studio Portrait on Epson 250gsm semi-gloss photo media, all in Quality mode.

Lab technicians weighed each ink cartridge before installation (with the weight of each ink with all packaging removed recorded) and after every 50-print test run, calculating the weight of ink used for each colour. To account for the Canon model's sub-tank, a procedure was followed to ensure that the sub-tank level was at its maximum before the print run commenced and again after the print run was completed, thereby ensuring that ink replenishment of the sub-tanks was taken into account for each print run.

For both models, one cartridge was then run to exhaustion and the weight of the empty cartridge was recorded.

Test Environment: Products were tested in Keypoint Intelligence's environmentally controlled UK test lab, which replicates typical office conditions.

Test Equipment: Keypoint Intelligence's dedicated test network in Europe, consisting of Windows 10 Professional workstations, 10/100/1000BaseTX network switches and CAT5e/6 cabling.

Test Procedures: Keypoint Intelligence employs proprietary procedures and industry-standard test procedures in its lab test methods. In addition to a number of proprietary test documents, Keypoint Intelligence uses industry-standard files including an ASTM monochrome test document for evaluating black image quality. Alongside a visual observation, colour print quality and gamut size are evaluated using XRite i1 profile software and an i1 Pro colour spectrophotometer and analysed using i1i0 Advanced Scanning Table. Density of black and colour output was measured using XRite 508 and XRite exact^{Xp} densitometers.

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About Keypoint Intelligence

For over 60 years, clients in the digital imaging industry have relied on Keypoint Intelligence for independent hands-on testing, lab data, and extensive market research to drive their product and sales success. Keypoint Intelligence has been recognized as the industry's most trusted resource for unbiased information, analysis, and awards due to decades of analyst experience. Customers have harnessed this mission-critical knowledge for strategic decision-making, daily sales enablement, and operational excellence to improve business goals and increase bottom lines. With a central focus on clients, Keypoint Intelligence continues to evolve as the industry changes by expanding offerings and updating methods, while intimately understanding and serving manufacturers', channels', and their customers' transformation in the digital printing and imaging sector.

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