

Epson WorkForce Pro WF-8590 Series*

24 PPM Colour • 24 PPM Black



Reliability	Excellent
Multitasking	Good
Administrative Utilities	Fair
Feedback to Workstations	Very Good
Ease of Network Setup	Good
Print Drivers	Very Good
Colour/Black Print Quality	Good
Colour/Black Copy Quality	Good
Colour/Black Print Productivity	Very Good
Colour/Black Copy Productivity	Very Good
Scan Functions	Good
Ease of Use	Very Good
Feature Set	Very Good
Security Features	Not Rated
Environmental Features	Not Rated
Ink Yield	Excellent

EXECUTIVE SUMMARY

The Epson WorkForce Pro WF-8590 DWF proved to be a solid and easy-to-use device in BLI's testing. This A3-size colour all-in-one inkjet delivered a solid performance in many aspects of BLI's rigorous lab evaluation; it experienced no misfeeds and required no service calls during its 37,500-impression durability test.

Offering standard automatic duplex and wireless networking, the unit includes strong mobile printing capabilities—including support for Email Print, Epson iPrint, Apple AirPrint and Google Cloud Print. In addition, Wi-Fi Direct connectivity creates a secure peer-to-peer connection between mobile devices and the MFP, and helps to minimize the security risk of unauthorised access to the corporate network.

The unit's scan functionality is good overall. Useful for facilitating day-to-day workflows, users can scan to a variety of destinations including cloud repositories, a USB drive, network folders and to email; OCR features enable digitized content to be easily searchable and editable. Furthermore, colour scan compression, which is generally not offered by entry-level devices, worked very well, with the document file size greatly reduced, which can help attachments stay within corporate email limits and prevent delivery

Test duration: Two months, including a 37,500-impression durability test.

Maximum monthly duty cycle: 75,000 impressions.

Manufacturer's recommended monthly volume for optimum performance: Information not provided by the vendor.

More information on the Epson WorkForce Pro WF-8590 DWF is available through bliQ (www.buyerslab.com/bliQ).

* BLI tested the WF-8590 DWF, which is sold in Europe, while the WF-8590 is sold in North America/Australia/New Zealand/Latin America, the WF- 8593 is sold in China, the PX-M7050FP is sold in Japan and the WF8591 is sold in the rest of Asia.

failure. Unusual for models in this speed range, the WF-8590 DWF offers a standard single-pass feeder which helps to reduce wear and tear on the document feeder and on originals by scanning both sides of the original in one pass.

The unit proved to be highly productive. In tests designed to be key indicators of real-world performance, the Epson WorkForce Pro WF-8590 DWF outpaced most inkjet and laser competitors, registering fast first-print times from overnight sleep and best-in-class times for all three test files from ready mode, and the fastest first-copy times

STRENGTHS

- Highly reliable—flawless durability performance
- Exceptionally high tested yields for all colours compared with inkjet and laser average; tested yields for black, cyan and yellow far exceeded their rated yields
- Mobile print support offered via Email Print (which allows users to print email and file attachments) and, for Wi-Fi-enabled configurations, Epson iPrint, Apple AirPrint and Google Cloud Print
- Fast first-print times for all three test files printed from ready mode and when coming out of overnight sleep versus inkjet and the laser devices; fast simplex and duplex running speeds when printing sets versus inkjet devices
- Fast first-copy times from the platen and document feeder in both modes versus inkjet and laser devices; fast running speeds when copying sets in colour and black 1:1 and 1:2 modes versus inkjet devices
- OCR functionality enables users to create editable, searchable digital files; compression in colour mode worked very well; control panel integration with Epson's Document Capture Pro helps simplify capture/routing workflows
- Broad greyscale range, crisp fonts and dark solids in print mode; natural skin tones in photographic print output; negligible ink transfer when water was dripped across black output; no ink transfer when an alkaline highlighter was used
- Standard duplex single-pass feeder reduces wear and tear on the document feeder and on originals; standard automatic duplexing reduces paper waste; printing in economy mode helps extend the life of the cartridges
- Faster than average scan speeds in all modes versus inkjet and laser models
- Easy-to-use print driver has preprogrammed job settings and allows users to save their own one-click selections; Job Arranger Lite lets users insert blank pages and reorganize, rotate or delete pages in a document
- Simple setup and routine maintenance procedures

WEAKNESSES

- Saturation not bright enough in business graphics in print and copy modes using default settings
- Slow simplex copy speeds compared to laser models tested
- Text and fine lines exhibited ink bleed in print mode, and the resulting slight halo effect was visible to the unaided eye
- Limited fleet management utility; lacks support for the management of a fleet of mixed hardware
- Below average paper weight support from the trays

in its class. Boosting user productivity, an Interrupt hard key lets walk-up users halt a current job to output a quick copy job without the need to wait for jobs in the queue to finish. Image quality for print output was good overall, with crisp dark fonts, distinct fine lines and natural flesh tones in photographic output. In copy mode, it was judged good overall, plus users can select best mode to improve copy quality.

Ease of use is a key trait with this model. The WorkForce Pro WF-8590's colour touchscreen control panel is easy to use and offers added functionality for walk-up users, including the ability to turn on eco settings, save job profiles, check consumable status and configure network settings; another handy feature is that users are able to save settings for regular jobs in the driver. Its perfect reliability and simple routine maintenance procedures will keep downtime to a minimum.

Given its strong all-round performance, BLI highly recommends this device as a cost-effective choice for small- to mid-size workgroups in need of mostly print and occasional copy output.

TEST RESULTS AND OBSERVATIONS



RELIABILITY

EXCELLENT

PMS/Malfunctions	Service Required	Meter Count (Impressions)	ADF Counts (Scans)
Starting Meter Count		0	0
Ending Meter Count		37,500	3,750
Total Misfeeds/Misfeed Rate	0/Not applicable		0/Not applicable
Service Calls	0		



MULTITASKING

GOOD

- Typical of small- to mid-size workgroup A4 MFPs, the device downloads one print job at a time from the network queue, and jobs are processed on a first-in, first-out basis; administrators cannot select and prioritise different job types. However, quite unusual for devices in this class, the unit allows users to perform a few multiple functions concurrently. Users can program scan and copy jobs while the device is printing. The unit has an interrupt hard key to allow walk-up users to stop the current copy job in the middle of a set and perform a quick copy job. When the job is completed users must press the interrupt key again to resume the interrupted job.

Multitasking

Primary Function	Secondary Function	PRINT	SCAN	COPY
PRINT		Yes	Yes	Yes
SCAN		Yes	No *	No *
COPY		Yes	No *	No *



ADMINISTRATIVE UTILITIES


FAIR

- The embedded web server allows users to perform a wide variety of tasks. These include configure DNS/proxy and AirPrint (mobile printing from Apple devices) settings; check for firmware updates; register the device with Epson Connect and Google Cloud Print services; and access ink levels, device status and network settings information. Although by default there's no password protection, this can be easily set up by administrators.
- Network configuration settings can also be done at the control panel, or using the EpsonNet Config utility, included on the CD or available to download from Epson's web-site. This utility enables administrators to configure the network interface of Epson printers only; it is not as fully-featured as some of the fleet management software available with other OEMs, which can simplify the management of a mixed fleet of Epson and third-party output devices on the network for administrators, as well as provide device monitoring features such as email alerts or activity reports.


EPSON
WF-8590 Series
Basic Settings



[Epson Connect Services](#)


[Google Cloud Print Services](#)


[DNS/Proxy Setup](#)


[Firmware Update](#)


[Root Certificate Update](#)


[AirPrint Setup](#)


[Wi-Fi Direct Setup](#)


[Printer Information](#)

Register your printer with or delete it from Epson Connect services. Suspend or resume Epson Connect services. [Unregistered]

Register your printer with or delete it from Google Cloud Print services. Suspend or resume Google Cloud Print services. [Unregistered]

Configure DNS/Proxy settings.

Connect to the Internet and update the printer firmware to the latest version. Current Version: HA16F1 26.C8

Update the root certificate to use cloud services. Current Version: 01.00

Configure AirPrint settings.

Configure Wi-Fi Direct connection settings.

Check ink levels, printer status and Wi-Fi/network settings.

Refresh

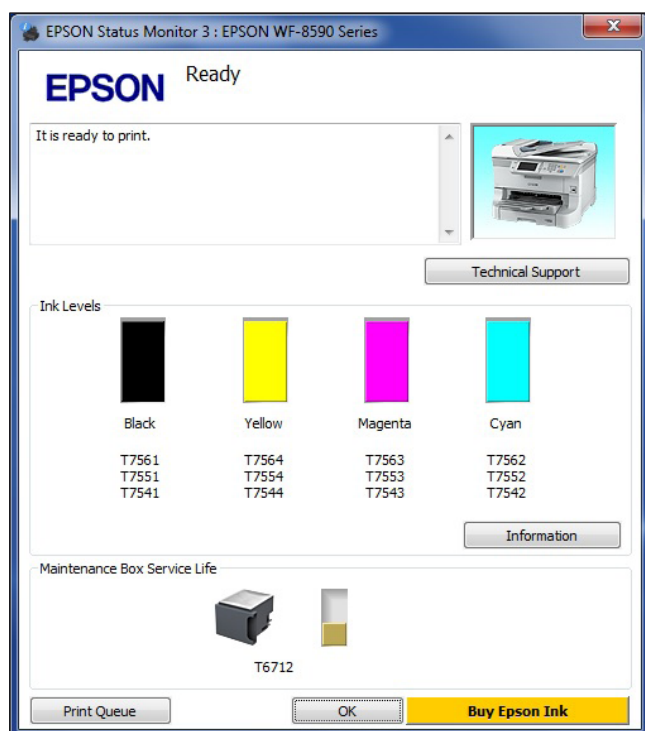
Administrators can configure mobile printing via Wi-Fi Direct, Epson Connect, AirPrint and Google Cloud Print.

- The embedded web server allows email alerts to be set up for error conditions and when consumables need replacing. Up to eight email alerts can be set up for events (paper out, ink low, scanner error, maintenance box nearing end, among others) and delivered to up to five recipients; email alerts can be tailored to each recipient. BLI technicians found the email notification setup to be a very straightforward process, as it offers a clear and simple checkbox design.



FEEDBACK TO WORKSTATIONS

VERY GOOD



Status Monitor is the main feedback utility and provides pop-up messages for warnings and errors such as “Ink is low” or when a jam has occurred or no paper. Administrators can select specific events for alerts. No pop-ups for print job completion notification are available. In the window (multiple ones appear if there are multiple problems) users can see ink status, indicated in colour-coded approximate-percentage gauges; click the Online Support button to receive instructions about resolving the issue; view the queue; and order supplies.

- Users can click on the icon on the taskbar at any point to check device status, and it provides some level of maintenance with options for administrators to instigate a nozzle check, head clean or printhead alignment.
- Users can view the remaining life of the ink cartridges by clicking the Ink Levels button on the main screen of the driver. By clicking on the Information button, user can view information such as the cartridge codes for re-ordering purposes. The How To button brings up detailed graphical instructions on ink cartridge replacement procedures.

EPSON
WF-8590 Series

Status

[Printer Status](#)
[Wi-Fi/Network Status](#)
[Maintenance](#)
[Contacts](#)

User Default Settings

Access Control Settings

Printer Settings

Wi-Fi/Network Settings

Network Security Settings

System Settings

Administrator Settings

[Basic Settings](#)

Epson Connect Services
Google Cloud Print Services
DNS/Proxy Setup
Firmware Update
Root Certificate Update
AirPrint Setup
Wi-Fi Direct Setup
Printer Information

Status > Printer Status

English

Available.

BK

Y

M

C


Black (BK) :	T7561/T7551/T7541
Yellow (Y) :	T7564/T7554/T7544
Magenta (M) :	T7563/T7553/T7543
Cyan (C) :	T7562/T7552/T7542
Maintenance Box :	T6712

Rear Paper Feed

Paper Size :	A4 210 x 297 mm
Paper Type :	plain papers

Cassette 1

Users can proactively access the embedded web server to view device and ink status.



EASE OF NETWORK SETUP

GOOD

- Physical setup of the unit, which comes preassembled, is straightforward. The paper cassettes are packaged separately. Two people are required to position the unit on top of the paper trays; locks and thumbscrews are required to secure the unit on top. Packaging materials aren't excessive; users must remove blue packing strips from the device once it is unpacked. The ink cartridges are not preinstalled; users must open the protective pouch that each cartridge is housed in and then can easily install them.
- It takes 13 clicks to install the print driver, utilities, including those for scanning, the User Guide and ABBYY FineReader Sprint, which are included with the device on a CD. The routine is automated, the IP address is assigned and the port is created automatically; the unit will detect the optional paper drawer if it's purchased.
- A PostScript 3 driver is also available but wasn't tested.
- Epson advises that Epson NetSetup can be used to deploy the print driver across multiple workstations. An admin pack is also available for group policies.

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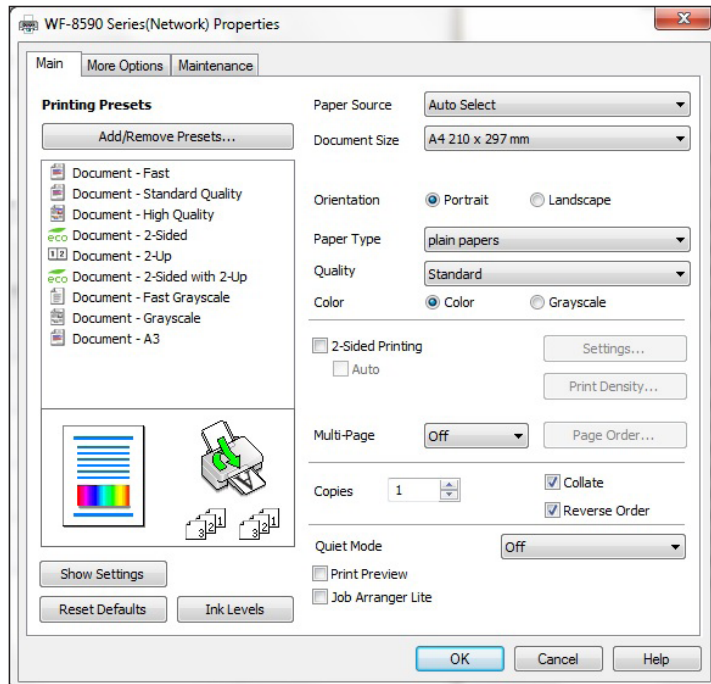
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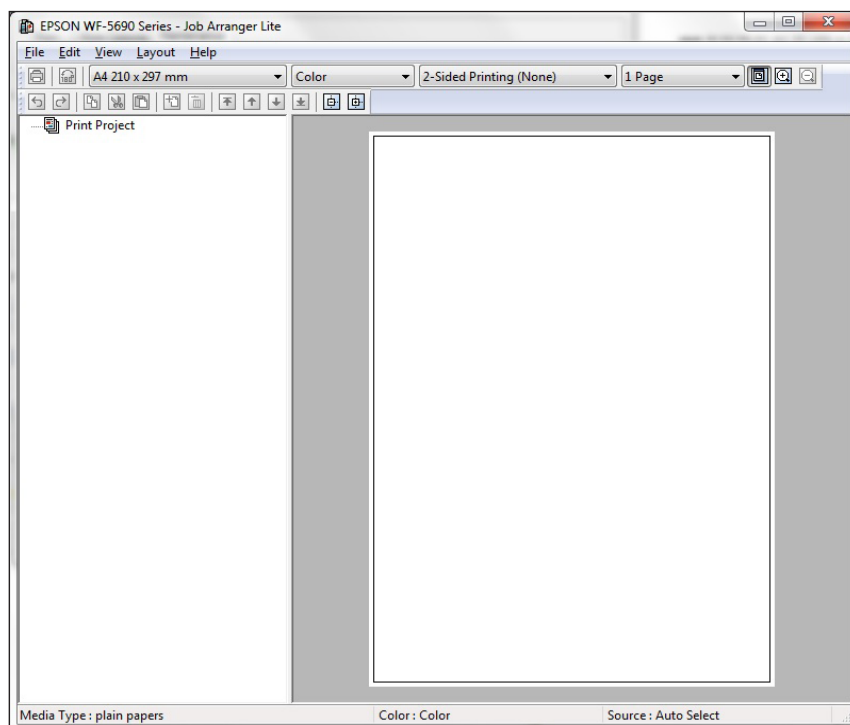


PRINT DRIVERS

VERY GOOD

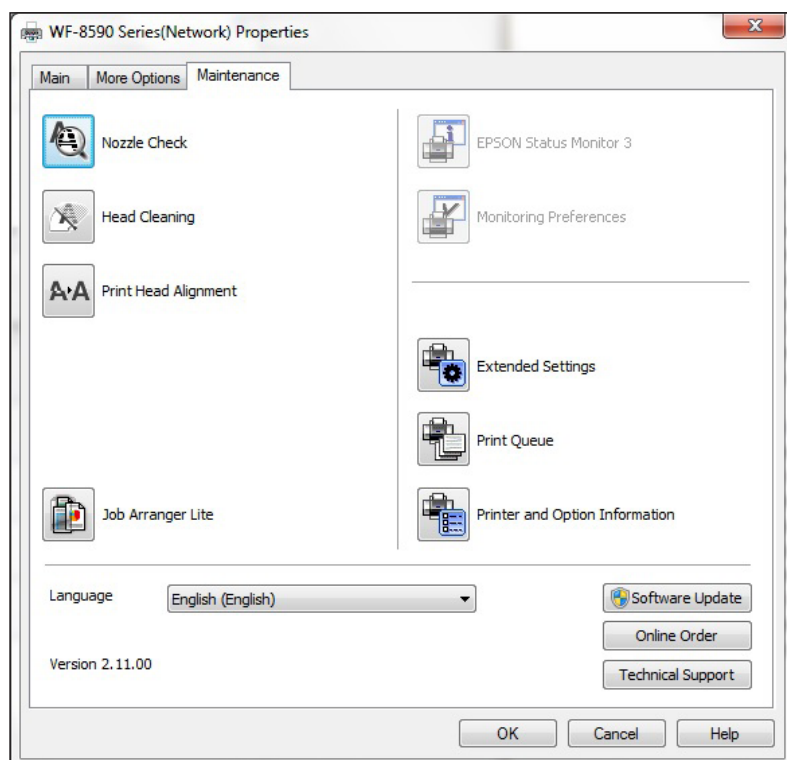


A host-based driver that supports various Windows and Mac operating systems is included. While quantity, duplex, orientation, and paper size are on the main screen, users can create one-touch shortcuts—eight are preprogrammed—for common jobs. Graphical changes indicate which features have been selected.

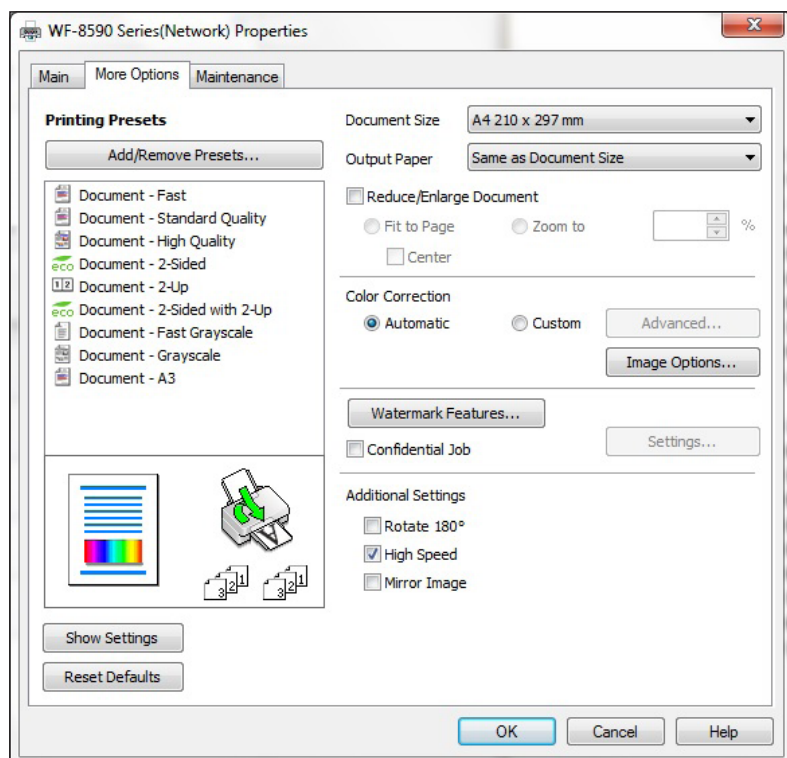


Users can open Job Arranger Lite via the Maintenance tab, which allows them to insert blank pages and reorganize, rotate or delete pages of a file before printing, without affecting the original document. Multiple jobs can be combined into one, too.

- File size doesn't increase regardless of whether collate is selected from the driver or within the print screen of the application.



The Maintenance tab lets users check device errors and consumables status or perform a head cleaning routine to improve image quality, among other things.



The driver contains a straightforward three-tab menu layout and users should quickly understand how to navigate it. A particularly user-friendly feature, it allows users to save settings for frequently printed jobs. Selections on the Main and More Options tabs let users change colour correction settings and reduction/enlargement mode, among other things.

- Secure print jobs are not hidden while the job is still in the queue, but there is an option available in the driver for users to change the filename displayed. Multiple secure print jobs cannot be simultaneously released with the same PIN code, nor can secure job settings, such as duplex, paper size and number of sets, be changed before it is released. Jobs are automatically deleted from the unit when released.

Epson WorkForce Pro WF-8590 DWF Print Driver Features

	Host-Based	PostScript 3
Auto Feature/Device Detection	Yes	No
Booklet Printing	Yes	Yes
Collate	Yes	Yes
Max Paper Sources per Job	1	1
Mirror Image	Yes	Yes
Negative Image	No	No
N-up Printing	1 to 4	1 to 16
Overlay	No	No
Paper Gauge	No	No
Print and Hold	No	No
Proof Print	Yes	No
Quantity Selection	Up to 999	Up to 999
Reduction/Enlargement	Auto, 10% to 400%	1 to 1,000%
Resolution Modes	1200 x 2400 dpi	1200 x 2400 dpi
Save Settings	Yes	No
Secure Print	Yes	No
Watermarks/Custom Watermarks	Yes	No
Cover Mode	No	No
Poster Mode	Yes (4 x 4)	No
Separator Pages	No	No
Ink Gauge	Yes	Yes
Ink Save	Yes (via economy mode)	Yes
Print All Text as Black	No	No

The print driver also has fix red-eye and rotate features, and lets users take advantage of custom colour correction settings (adjust brightness, contrast, saturation and density).

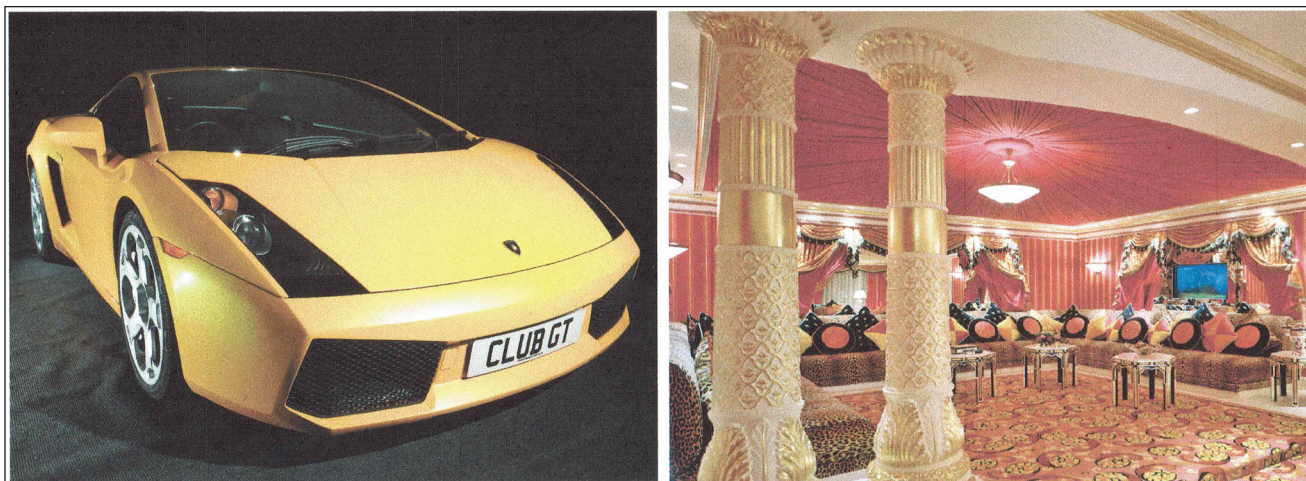


COLOUR/BLACK PRINT QUALITY

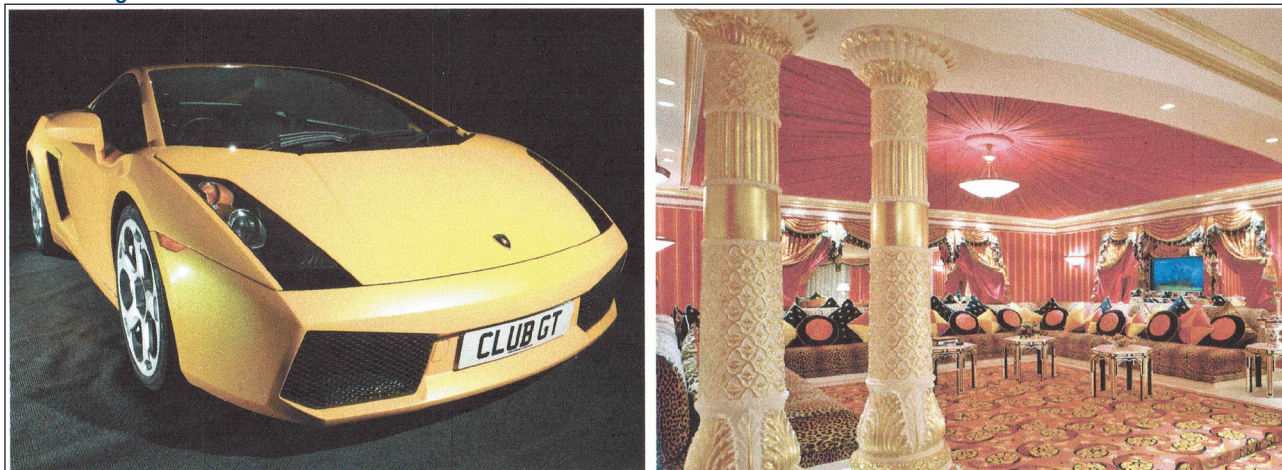
GOOD



Draft Mode: Output was washed out, as would be expected, but some finer details were still visible. Minor banding was evident in some output.



Standard Mode: Though colours were not as vibrant as those in output produced by laser models, photographic output showed a good level of fine detail.



High Quality Mode: Output exhibited bright colours and very good transitions from light to dark areas. Finer details were not lost in dark backgrounds (see image of the car above; note how the folds in the fabric under the car are clearly visible).

- In standard default mode, business graphics output displayed above average pastel shades, while consistency of solids, sharpness of fine detail and background reproduction were all average; colour saturation in charts and graphs was not bright enough. Photographic images exhibited average smoothness and sharpness of fine detail, with an above average halftone range and natural-looking skin tones.

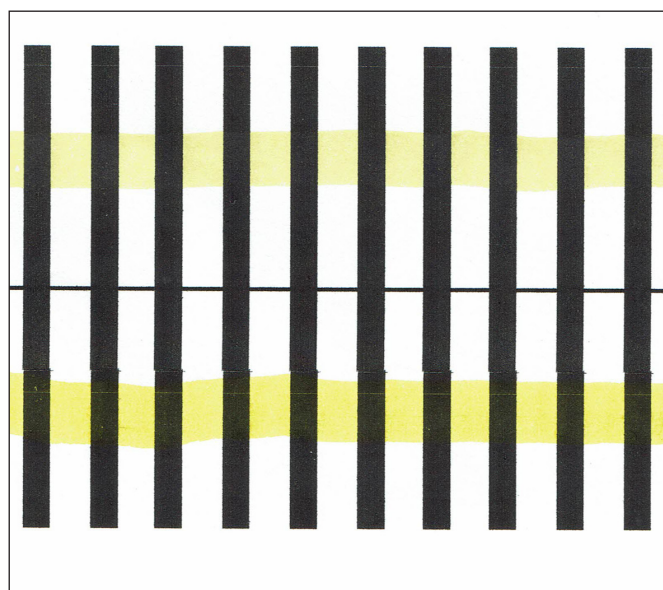
BUYERS LAB

Characters (above, magnified to show detail) were dark and fully formed, and legible down to the smallest 3-pt. level, with competitive smoothness of curves/serifs, but character definition was below average in default settings.

- Production of closely spaced fine lines and consistency of line thickness (when viewed without magnification) were competitive, while the quality of line consistency was poor when viewed under magnification. Circles were smooth and fully formed and diagonal lines showed no stair-stepping. Some ink bleed was evident around text and fine lines, which caused a slight halo effect and was visible even when viewed without magnification. Greyscale was visible over the whole range, with distinct separation between all levels; smoothness of halftone coverage was average with slight graininess evident up to the 50 percent level, but there was no banding. Solids were dark and exhibited above average smoothness of ink coverage.
- Waterfastness of black ink was superior to that of comparable models; when technicians applied water to black output, negligible ink transfer was observed. Moreover, ink did not smear when an alkaline highlighter was applied, while minimal smearing was detected when an acid highlighter was used.

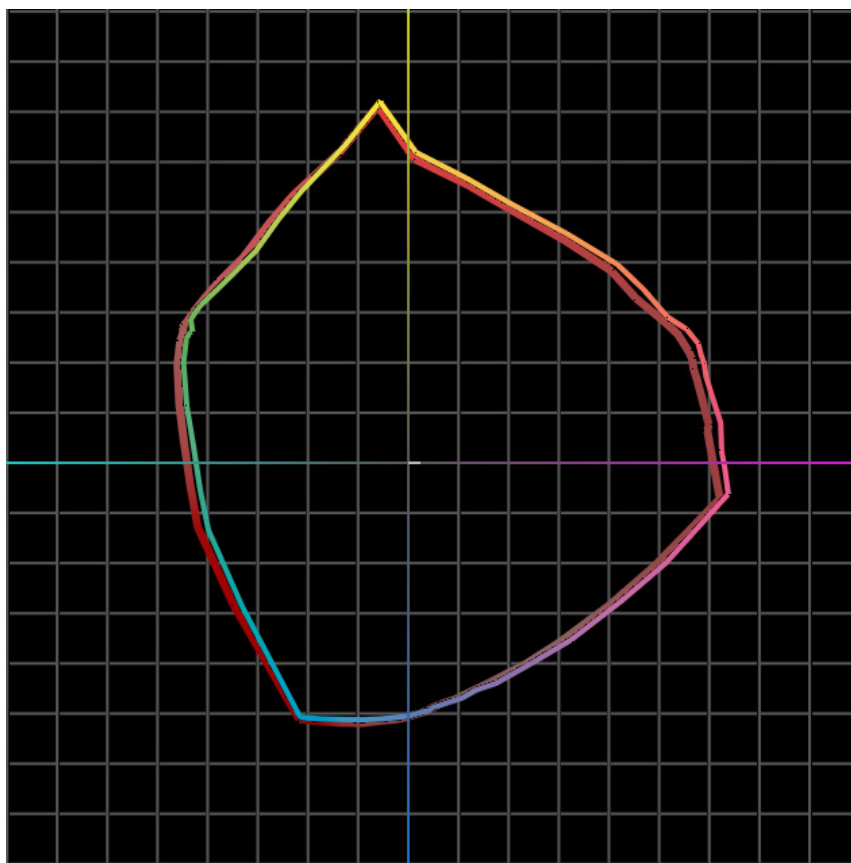


WorkForce Pro WF-8590 DWF Waterfastness


WorkForce Pro WF-8590 DWF Highlighter Smearfastness
(alkaline, top; acid, bottom)

Text	Good
Line Art	Good
Halftone Pattern	Good
Halftone Range	Excellent
Solids	Very Good
Colour Business Graphics	Good
Colour Photographic Images	Good

Comments: Colour print quality is tested using a colour test target with print samples taken at five evenly spaced intervals throughout the test period. Test targets are read using an X-Rite Eye-One/iO Colour Spectrophotometer, and samples are analysed using the CIE XY Chromaticity Diagram. The unit employs an internal automatic calibration process.



Over the course of testing the colour gamut showed very little shift—indicating a consistent reproduction of colour over time—with only a small difference from the beginning (shown chromatically) to the end of testing (shown in red).

Colour Print Density Readings

	Epson WorkForce Pro WF-8590 DWF	Competitive Average (inkjet)	Competitive Average (small workgroup colour laser)
Cyan	1.09	0.88	1.12
Magenta	1.00	0.94	1.16
Yellow	0.80	0.77	0.85

Density of a printed image with blocks of all solid colours (based on the average of two readings for each colour).

Print Density

	Density Range	Average Density
Epson WorkForce Pro WF-8590 DWF	1.35 to 1.36	1.36
Density for inkjet devices to date	1.11 to 1.57	1.37
Density for small workgroup colour laser models to date	1.12 to 1.69	1.45

Measurements are based on four readings corresponding to four different solid black locations on the output. The higher the density reading, the darker the image.

Visible Halftone Range

Epson WorkForce Pro WF-8590 DWF	10% to 100%
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The halftone range test original consists of 10 blocks of increasing dot-fill levels (10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90% and 100%).

Black Waterfastness

	Drip 1	Drip 2	Average
Epson WorkForce Pro WF-8590 DWF	0.008	0.009	0.009
Average for devices tested to date	0.121	0.122	0.122

This test measures the amount of colourant transferred from a printed to an unprinted area when a drip of distilled water is allowed to run across five parallel bars. Five density readings are averaged for two separate drips. The sample is allowed to dry for one hour before the test is performed. One sample is tested at default quality.

Black Highlighter Smearfastness

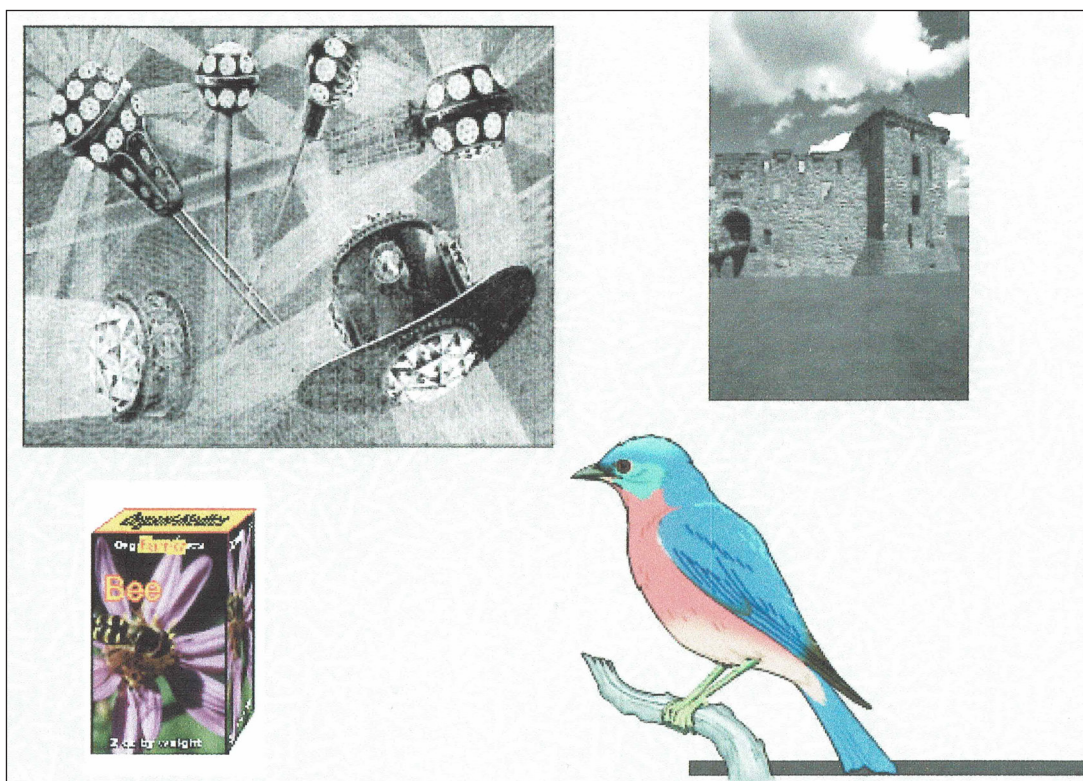
	Alkaline	Acid
Epson WorkForce Pro WF-8590 DWF	0.000	0.020
Average for devices tested to date	0.029	0.054

This test measures the amount of colourant transferred from a printed to an unprinted area when briefly contacted by two types of highlighters. Density readings are taken for each highlighter before and after vertically crossing five printed parallel horizontal bars to determine the amount of black ink transferred. The sample is allowed to dry one hour before the test is performed. One sample is tested at default quality.



COLOUR/BLACK COPY QUALITY

GOOD

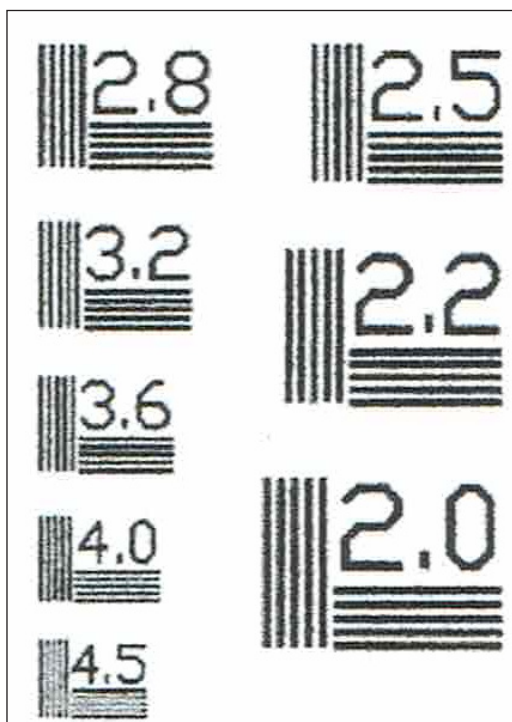


Business graphics output displayed above average production of pastel shades and competitive consistency of solids and background reproduction. However, output lacked sharpness of fine detail, (note how the subtle background patterning visible at the top of the image above fades out near the bottom of the image) while colour saturation in charts and graphs was not bright enough.



Photographic images had a competitive halftone range, but exhibited graininess and colours lacked vibrancy; skin tones were slightly yellowish.

- Characters exhibited average boldness and were fully formed, but with below average sharpness, while curves/serifs had jagged edges.



Production of closely spaced fine lines was average and the presence of ink bleed impacted on the consistency of line thickness. Circles were smooth and fully formed and diagonal lines exhibited no stair-stepping.



Text and line art suffered from minimal haloling.



Greyscale was visible over the entire range, with distinct separation between all levels; halftone coverage suffered from some graininess, but there was no banding.



Solids exhibited average darkness and consistency of fill areas. Users can select best mode to improve copy quality.

Text	Good
Line Art	Good
Halftone Pattern	Good
Halftone Range	Excellent
Solids	Good
Colour Business Graphics	Good
Colour Photographic Images	Good

Colour Copy Density Readings

	Original Density	Epson WorkForce Pro WF-8590 DWF Copy Density	Competitive Average (inkjet)	Competitive Average (small workgroup colour laser)
Cyan	1.58	0.99	0.92	1.21
Magenta	1.53	0.86	0.96	1.17
Yellow	1.11	0.80	0.76	0.85

Density of copied image when tested in the default mode using a KATUN test original containing blocks of all solid colours (based on the average of two readings for each colour).

Copy Density

	Density Range	Average Density
Original	1.68 to 1.78	1.72
Epson WorkForce Pro WF-8590 DWF	1.31 to 1.37	1.34
Density for inkjet devices tested to date	1.00 to 1.55	1.34
Density for small workgroup colour laser devices tested to date	1.15 to 1.89	1.44

Measurements are based on two readings corresponding to two different solid black locations on the output. The higher the density, the darker the image.

Visible Halftone Range

Epson WorkForce Pro WF-8590 DWF	15% to 100%
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The halftone range test original consists of eight blocks of increasing dot-fill levels (15%, 29%, 53%, 77%, 83%, 91%, 95%, 100%).



COLOUR/BLACK PRINT PRODUCTIVITY

VERY GOOD

- First-print time from overnight sleep is much faster than average—in fact the second fastest—when compared with inkjet all-in-ones in this class tested to date; it is also faster than average when compared with small workgroup colour laser/LED devices tested. First-print times for all three test files are much faster than average for both groups.
- When compared with competitive inkjet devices, running speed when printing multiple sets in colour and black simplex and duplex modes is faster than the average. When compared with comparable colour laser/LED devices (small workgroup models in the 20

to 30 ppm range) tested, colour and black running speed when printing multiple sets is competitive in simplex and faster than average in duplex mode.

- Running speed when printing BLI's job stream, which simulates typical traffic in a multi-user environment, in colour and black modes is above average compared with the inkjet group—in fact, the fastest in this group—but competitive versus the laser/LED group; the WF-8590 tended to pause during printing, a common trait in inkjet devices.

First-Print Time from Overnight Sleep

	Time in seconds	Epson is % faster
Epson WorkForce Pro WF-8590 DWF	13.05	--
Inkjet Competitive Average	24.79	47.4%
Small Workgroup Colour Laser/LED Competitive Average	28.29	53.9%

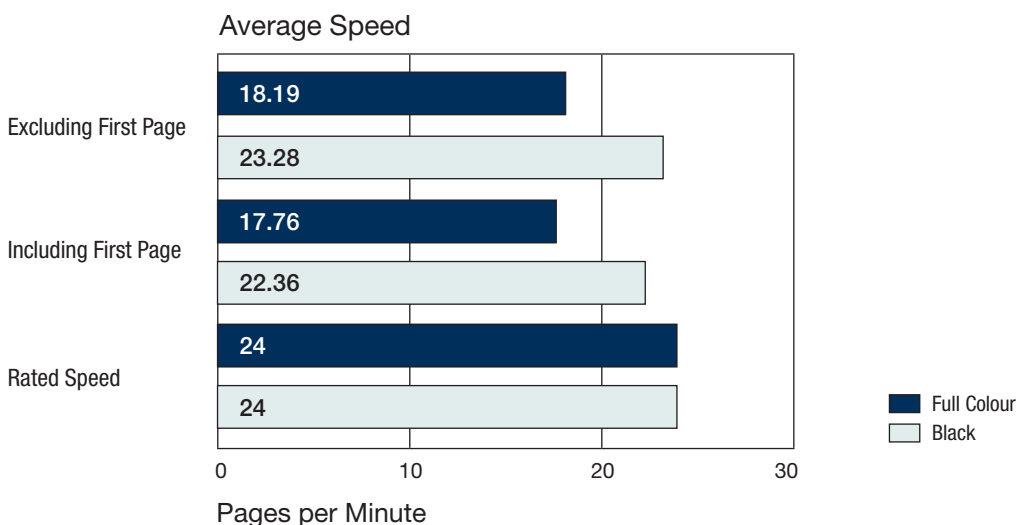
Device sits idle overnight. Time in seconds includes warming up, processing, imaging and delivering a single-page test file to the tray.

First-Print Times | Competitive Averages

Windows 7		Epson WorkForce Pro WF-8590 DWF	Inkjet Competitive Average	Epson is % faster than inkjet average	Small Workgroup Colour Laser/LED Competitive Average (PCL)	Epson is % faster than laser average
Word DOC	Black Text	6.94	15.98	56.6%	13.00	46.6%
PowerPoint PPT	Colour Graphic/Text	7.89	15.72	49.8%	16.19	51.3%
Acrobat PDF	Black Graphic/Text	6.15	13.89	55.7%	13.03	52.8%
Excel XLS	Colour Graphic/Text	7.00	INA	INA	14.73	52.5%

Speeds tested with the host-based driver at 600 dpi. Time in seconds includes processing, imaging and delivering a single-page test file to the tray.

BLI's Tested Print Speeds versus Manufacturer's Rated Speeds



Print speed is tested using BLI's Monochrome Test Original with 6% page coverage and BLI's XLS test file, which consists of colour text and graphics. The test page is printed in a quantity equal to double the vendor's rated print speed for the device in each mode tested (e.g., if the vendor's rated print speed is 20 ppm, 40 pages are printed). The unit's print speeds were tested using the GDI host-based driver.

Average Print Productivity | Competitive Averages

SPEED IN PPM	Epson WorkForce Pro WF-8590 DWF	Inkjet Competitive Average	Small Workgroup Colour Laser/LED Competitive Average (PCL)
FULL COLOUR			
1:1	21.1	12.3	17.9
1:2	16.1	8.0	11.8
BLACK			
1:1	20.2	14.1	19.1
1:2	15.3	8.4	12.5

Print speed is tested using a 10-page full-colour document (printed in full-colour mode) and a 10-page mixed-colour-and-black document (printed in black mode). BLI obtains the overall print speed for each mode by averaging the tested speed for each run length (1 and 5 sets).

Job Stream | Competitive Averages

SPEED IN PPM	Epson WorkForce Pro WF-8590 DWF	Inkjet Competitive Average	Small Workgroup Colour Laser/LED Competitive Average (PCL)
Full Colour	11.6	7.8	13.0
Black	12.5	9.0	14.0

The unit was tested with the GDI driver. BLI's job stream includes Word documents, Outlook email messages, Excel spreadsheets, PowerPoint, HTML and Acrobat PDF files, totalling 19 pages. This test simulates the type of traffic a typical device might experience in a real-world, multi-user environment. All of the files are sent to the device as a group, at which time the stopwatch begins; timing ends when the last page of the last file exits the device.



COLOUR/BLACK COPY PRODUCTIVITY

VERY GOOD

- First-copy times from the platen and document feeder in black and colour modes are faster than average—in fact, by far the fastest in colour—compared with inkjet all-in-ones in this class tested to date. Equally, the device's first-copy times are considerably faster than average compared with small workgroup laser/LED devices tested.
- Running speed when copying sets in all colour and black modes is much faster than average compared with inkjet competitive models in its class. When compared with the laser/LED group, running speed in all modes is slower than average in simplex mode but competitive in both duplex modes.

First-Copy Time in Seconds | Competitive Averages

	Epson WorkForce Pro WF-8590 DWF	Inkjet Competitive Average	Small Workgroup Laser/LED Competitive Average
FULL COLOUR			
Platen	9.44	18.27	16.90
Document Feeder	10.57	19.47	18.30
BLACK			
Platen	8.57	11.66	13.40
Document Feeder	10.59	15.49	14.41

Average Copy Productivity | Competitive Averages

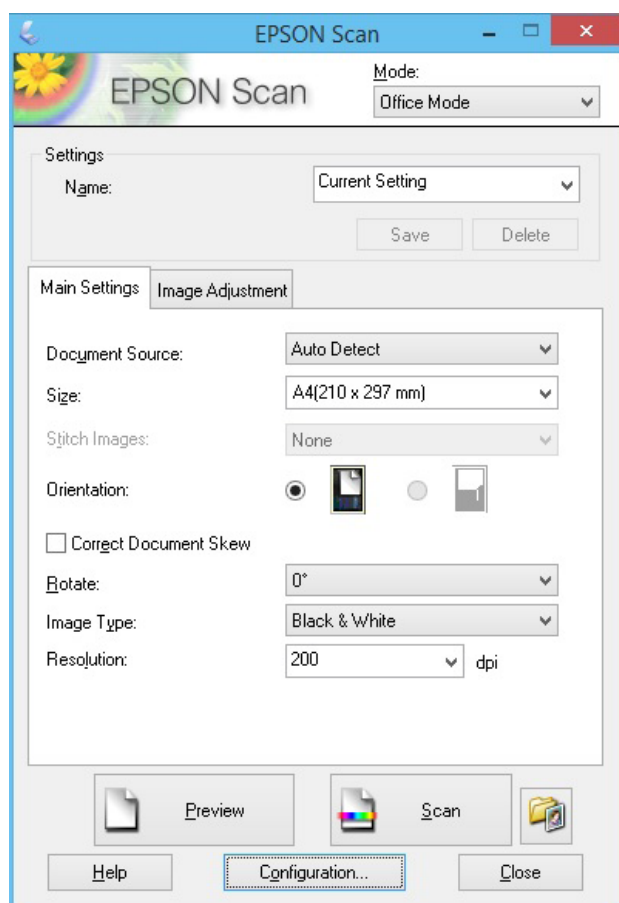
SPEED IN PPM	Epson WorkForce Pro WF-8590 DWF	Inkjet Competitive Average	Small Workgroup Colour Laser/ LED Competitive Average
FULL COLOUR			
1:1	8.7	6.5	14.9
1:2	9.4	5.4	10.5
2:2	8.7	5.1	9.9
BLACK			
1:1	9.7	8.1	18.0
1:2	10.3	6.2	11.8
2:2	10.2	5.8	11.1

Copy speed is tested using a 10-page full-colour document (printed in full-colour mode) and a 10-page mixed-colour-and-black document (printed in black mode). BLI obtains the overall copy speed for each mode by averaging the tested speed for each run length (1 and 5 sets).



SCAN FUNCTIONS

GOOD

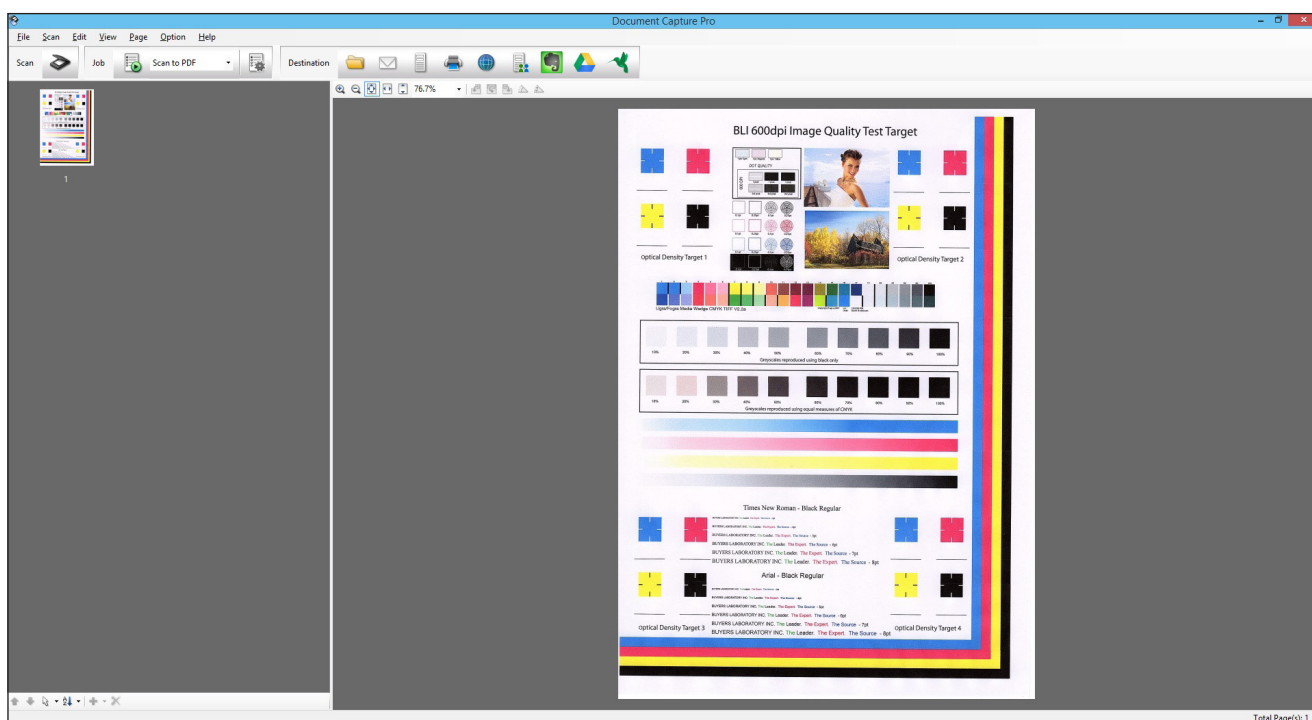


With Epson Scan (standard with the WF-8590 DWF) users can adjust a wide range of scan settings, including resolution (200 dpi, 300 dpi and 600 dpi), scan area, 2-sided, document type, density, orientation, compression ratio (low, middle and high), and PDF settings (assign a document open password to ensure file integrity). Optical resolution is 2400 x 1200 dpi. Supported file formats are JPEG, PDF and single- and multi-page TIFF.

- When scanning to the desktop, users can preview the first page of a scan for quality/orientation before transmission.
- Users can scan a document in colour or black and send it to a network folder, cloud repositories, FTP folder or print directly. All scan functions are located on the second

screen. In addition, the device provides TWAIN scanning and users can opt to send the scan file as an attachment to a selected email address. Users can edit email settings such as email subject header and the scan filename prefix for clarity. Maximum email file size attachment is 30MB; a Scan to Email log is available to users to print.

- If scanning to a USB drive in PDF format, the user can choose to password protect the document. Files are automatically saved to the main folder on the USB and filenames cannot be edited.
- In addition to the ability to select addresses directly from LDAP servers, users can select addresses from a local address book or program them at the control panel, which features a QWERTY keypad and offers a dedicated @ symbol for email addresses.
- The scan to SMB mode allows users to browse the network's tree structure to locate their chosen folder.
- Standard ABBYY FineReader Sprint provides OCR functionality to enable users to create editable, searchable digital files.



Document Capture Pro

- The device supports Epson's Document Capture Pro solution. Although not tested here, the desktop capture solution aims to simplify capture/routing workflows, including adding, reordering or deleting pages from a document; it offers users additional image and job processing features (such as fix skewed documents and split images after scanning) as well as the ability to customize and save scan profiles for frequently used operations. The program also offers the ability to scan to a variety of destinations, including network and local folders, SMTP, FTP sites, email, Microsoft SharePoint and cloud repositories such as Google Drive and Evernote.

- Scan speed in colour and black simplex and duplex modes is faster than average compared with inkjet all-in-ones in this class tested to date. Similarly, when compared with low-end workgroup laser/LED devices tested, scan speed in all modes is faster than average.
- Compression, which is unusual for this class of device, in colour mode worked extremely well, reducing file size to a much more workable level. Compression is not offered for black documents.

Scan Speed in IPM | Competitive Averages

	Epson WorkForce Pro WF-8590 DWF	Inkjet Competitive Average	Small Workgroup Laser/LED Competitive Average
FULL COLOUR			
1:1	21.4	6.6	12.3
2:2	22.5	6.3	10.3
BLACK			
1:1	23.5	9.0	18.0
2:2	28.3	8.1	15.5

Files are scanned at 300 dpi in PDF format.

Scan File Size in KB

FULL COLOUR (no compression)	1,834
FULL COLOUR (high compression)	598
BLACK (no compression)	49
BLACK (high compression)	NA

Testing is conducted with single-page files scanned at 300 dpi in PDF format.



EASE OF USE

VERY GOOD



The control panel has an alphanumeric keypad and dedicated keys for Home, Back, Interrupt and Status, along with several LEDs (power and error). A 5" colour touchscreen greatly simplifies walk-up activity. Navigation of the display is straightforward as the menu is clear and logically organized; there are four large icons for copy, scan and fax functions and presets, while smaller icons are located underneath for Memory Device, Contacts, Epson Connect, Eco Mode and Setup. Menus and screens cannot be customized.

- Two start buttons (one for colour and one for black) let users initiate copy jobs in either mode; device status and supplies can be checked by pressing the Status hard key; the Eco Mode button lets users quickly select several energy- and paper-saving features for jobs, such as the ability to adjust LCD screen brightness, the device's sleep timer and duplex copy. There's no help key, but the menu structure is clear and graphical instructions are displayed in the event of an error condition. The unit offers an interrupt hard key, unusual for its class, which allows walk-up users to stop the current job and perform a quick copy job. Finally, up to eight frequently used jobs can be programmed and saved as Preset options to streamline walk up activity. Presets can be added for copy, fax and scan jobs.



Loading paper is an easy process as there are no spring-loaded ramps or corner separators; paper is simply dropped into the drawer. Users must confirm paper type (for example, recycled, plain, letterhead, preprinted) and paper size via the display, which is common. There is a small hole in the paper tray which acts as a visual level indicator.

- Adjusting the trays for different-size media is simple. The length guide easily slides when pushed in or out, and the width guides move in sync (BLI recommends that users push both of them together or apart, though). The paper tray at the rear of the device can accommodate specialized media, such as envelopes, matte paper, thick paper, photo paper and glossy paper.
- Removing a misfeed from the paper trays at the rear areas is easy with clear access to jam locations, although the unit may need to be turned around if positioned against a wall or partition. The process of clearing a jam from the front access area is a little cumbersome and required more user intervention. The user must remove the exit tray and then remove the top paper tray, slide the blue lever forward in order to lower the cover, which then allows access for the user to reach into the device to retrieve the jammed paper. The cover must be pushed back up into place in order for the paper tray to be slotted back; if the user forgets and attempts to force the tray in, there is the potential to damage parts.
- When a jam happens, the display alert indicates the misfeed location and provides multi-step graphical instructions on removing the jammed paper; instructions are not

dynamically updated, so users must press a button on the display to advance to the next step, and confirm when they have finally cleared the misfeed.



Replacing ink cartridges is a straightforward process, keeping downtime to a minimum. Users open the front cover and then push in the empty cartridge to release it (it's spring-loaded). Slots are colour-coded and cartridges are “keyed”, making the process foolproof. Illustrations on the inside of the cover provide basic guidance and the whole process is so simple, users are unlikely to need any further instructions.



FEATURE SET

VERY GOOD

- The unit has standard Ethernet and wireless interfaces for networked printing, and a USB port for local printing.
- Wi-Fi Direct provides a direct wireless connection between the MFP and the mobile device, allowing users to print wirelessly without the security risk of unauthorised access to the corporate network. The device also has its own email address via the bundled Epson Connect, enabling users to print from mobile devices by sending an email to the printer. Epson Connect supports mobile print solutions such as Email Print (which allows users to print email and file attachments) and, for Wi-Fi-enabled configurations, Epson iPrint (for Apple iOS and Android devices), Apple AirPrint and Google Cloud Print.
- The device offers control panel integration with Epson's Document Capture Pro solution, which provides users with the ability to create several capture/routing profiles for frequently used workflows. Profiles can include a variety of image enhancements and document adjustments, as well as output destinations such as Evernote, Google Drive, Microsoft SharePoint, WebDav, FTP, email and folder.
- The WorkForce Pro WF-8590 DWF offers a dual (or single-pass) ADF, which is rare for competitive models in the group, and is capable of duplex scanning, copying and faxing;

standard automatic duplexing contributes to less paper waste. An eco mode icon on the unit's home touchscreen allows users to select eco-friendly settings to save on energy consumption.

- Users can also print from and scan to a USB drive via the port on the right side at the front of the unit. While the device confirms a USB device is recognized, it does not immediately display its contents and users will have to select Memory Device from the home screen. They must confirm the file type they require (JPEG, TIFF or PDF) for the device to then display the relevant documents found on the USB stick. When a file is selected, the filename, date created and file size are displayed; a preview is offered for JPEG and TIFF files and users can scroll using the left and right arrow buttons on the touchscreen to navigate through all the image files. They have the ability to make adjustments such as selecting fix red-eye prior to initiating printing, as well as select the number of copies, paper source, duplex print and print order (Last Page on Top or First Page on Top).
- Epson, as with a third of the competitive inkjet all-in-ones in this class, did not provide a figure for installed memory therefore BLI cannot evaluate its capacity against its competitors.
- Standard (250 sheets) and maximum (1,830 sheets) paper capacities are competitive; the 80-sheet bypass capacity is slightly below average. The rear tray can accommodate special media types—photo glossy, premium presentation, as well as envelopes among others. Output capacity is 250 sheets.
- Paper weight supported from the trays (90gsm) is below average, and is competitive from the bypass, at up to 256gsm.
- Standard fax features enable users to configure fax settings, store up to 550 pages in memory, fax to email, program the address book and access PC faxing.



SECURITY FEATURES

NOT RATED

- As expected of an inkjet all-in-one in this class, the device does not offer many security measures. However, job logs are available for Epson Connect print jobs and recent faxes.
- Secure printing is offered with PIN code release; jobs are automatically deleted from the unit when released.
- Walk-up users are able to view filenames of jobs to be released via Confidential Print, even if they are not authorised to release the job.
- Documents which are scanned and saved to a USB device in PDF format can be password protected to safeguard sensitive material.



ENVIRONMENTAL FEATURES

NOT RATED

Specified capable of running 30% post-consumer recycled paper	Yes
Specified capable of running 50% post-consumer recycled paper	Yes
Specified capable of running 100% post-consumer recycled paper	Yes
Instant/Quick Fusing	INA
Duplexing	Yes
Ink-save mode	Yes (economy mode)
RoHS compliant	Yes
Percent of product made from previous devices	≤ 1
Percent of product made from post-consumer materials	0
Percent of product made from pre-consumer materials	0
Percent of product made from bio-based materials	0
Product designed for recycling (easily disassembled, no binding agents)	Yes
Items that can be recycled	Device parts are recyclable except the thermo-setting resin and rubber
Hardware remanufacturing program for this product	No
Ink cartridge recycling program for this product	Yes
Prepaid label for return of toner cartridges/bottles for this unit	INA
Toner recycling system	NA
Ability to program features such as duplexing and auto shut-off over entire fleet	Yes
What tool can be used to do this?	Utility software provided
Green packaging materials for the product	Yes
Green packaging materials for its consumables	Yes
Packaging materials used	Cartridges: packaging made from post-consumer recycled paperboard; PE; EPS
Eco-Label Certifications	
ENERGY STAR	Yes
Other	ECMA-370/The Eco Declaration; Germany Blue Angel; Japan Eco Mark
Tested energy consumption levels of the device (watts)	
Ready/Idle	17
Energy-save	2.4
Sleep mode	2.4
During Printing	INA
How fast can this product be programmed to go into the following modes (seconds)	
Ready/Idle	NA
Energy-Save	60
Sleep mode	60
Can the above settings be programmed by a walkup user?	Yes
First-print time out of sleep mode (seconds)	INA

NA: Not applicable. INA: Information not available.



INK YIELD

EXCELLENT

- Based on the tested impressions of two extra-high-yield ink cartridges per colour, tested yields for black, cyan, magenta and yellow are the highest compared with copier all-in-ones in this class tested to date, and the highest by far when compared with other inkjet models.
- When the average tested yield for cyan, magenta and yellow are combined together, their average yield of 8,386 exceeded their rated yield of 7,500 pages
- The extra-high-yield cartridges available with this device have a capacity (10,000 for black and 7,500 for CMY) that's far higher than competitive inkjet and laser devices, whilst its WF-R8590 DTWF sister model offers super-high-yield ink cartridge bags with a capacity of 75,000 for all colours, making it ideally suited for MPS environments.

Tested Ink Yield

	Black	Cyan	Magenta	Yellow
Tested Impressions	11,878	7,915	6,510	10,733
Average across CMY (Epson)			8,386	
Competitive Average (Inkjets)	2,937	2,944	2,150	3,007
Average across CMY (Inkjets)			2,700	
Rated Yield	10,000	7,500	7,500	7,500
Average across CMY (Epson)			7,500	
Competitive Average (Laser)	5,508	5,409	5,041	5,271
Average across CMY (Laser)			5,240	

Tested impressions is based on an average of two cartridges per colour using the ISO 24712 five-page colour test original.

SUPPORTING TEST DATA

Test Environment: Testing was conducted under ambient conditions of 22°C (+/-2.7°C) and 45% RH (+/-10%); monitored daily by two Seven-Day Temperature/Humidity Chart Recorders, in Buyers Lab's test facility at Unit 1 Station Industrial Estate, Wokingham, Berkshire RG41 2YQ. All products lab tested by BLI are powered by dedicated circuits that are protected by ESP (Electronic Systems Protection, Inc.) surge protectors to prevent transient power and communication disturbances from affecting equipment under test.

Test Equipment: BLI's dedicated test network in Europe, consisting of Windows 2008 servers, Windows 7 workstations, 10/100/1000BaseTX network switches and CAT5e/6 cabling.

Test Duration: Products are tested for two months, three weeks of which consists of a durability test during which the product is run at half of its manufacturer-rated maximum monthly volume. BLI's daily test usage is designed to replicate real-world use over an eight-hour workday, and as such includes a mix of various-size documents, simplex and duplex modes, and a mix of short, moderate and long run lengths, and on/off cycles, throughout the day. All products lab tested by BLI are powered by dedicated circuits that are protected by ESP (Electronic Systems Protection, Inc.) surge protectors to prevent transient power and communication disturbances from affecting equipment under test.

Tested Configuration: Epson WorkForce Pro WF-8590 DWF base unit (firmware 26.C5.HI09EA)

Test Procedures: The test methods and procedures employed by BLI in its lab testing include BLI's proprietary procedures and industry-standard test procedures, including a BLI-developed variation of ASTM's 1318-90 Test Method for Determination of Productivity using Electrostatic Copy Machines. In addition to a number of proprietary test documents, BLI uses an industry-standard KATUN test original for evaluating black image quality and test suites from Quality Logic to evaluate applications compatibility. In addition, density of output is measured using an X-Rite 508 Densitometer. Units are tested for compatibility on Windows 7 with Microsoft Office Suite 2010, as well as Adobe Acrobat Reader 10.0.

About Buyers Laboratory LLC: Buyers Laboratory LLC (BLI) is the world's leading independent provider of analytical information and service to the digital imaging and document management industry. For over 50 years, buyers have relied on BLI to help them differentiate products' strengths and weaknesses and make the best purchasing decisions, while industry sales, marketing and product professionals have turned to BLI for insightful competitive intelligence and valued guidance on product development, competitive positioning and sales channel and marketing support. BLI also offers consulting and private, for-hire testing services that help manufacturers develop and market better products and consumables.

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CERTIFICATE OF RELIABILITY

Awarded to

SEIKO EPSON CORPORATION

for the performance of the

Epson WorkForce Pro WF-8590 DWF

in BLI's in-house durability test.



A handwritten signature in black ink, appearing to read "A. Polierone".

ANTHONY F. POLIERONE
MANAGING DIRECTOR

MAY 2015

DATE

This is to certify that when subjected to a 37,500-impression Buyers Lab durability test,
the Epson WorkForce Pro WF-8590 DWF proved to be a highly reliable product.

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