

## Canon imagePROGRAF iPF6350 vs Epson Stylus Pro 7900

	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
Advantage ✓		
Image Quality		
Print Productivity	✓	
Cost of Ownership	✓	
Device Feature Set	✓	
Driver Feature Set	✓	



Canon imagePROGRAF iPF6350 and Epson Stylus Pro 7900 under test in BLI's European test lab

### TEST OBJECTIVE

BLI International (UK) Ltd (BLI) was commissioned by Canon Europe to conduct confidential document imaging device performance testing on the Canon imagePROGRAF iPF6350 and the Epson Stylus Pro 7900, and produce a report comparing the relative strengths and weaknesses of the two products in terms of productivity, image quality, driver feature set and cost of ownership. All testing was performed in BLI's test facility in Wokingham, UK.

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## Executive Summary

The Canon imagePROGRAF iPF6350 proved to be significantly more productive than the Epson Stylus Pro 7900, with faster speeds across a wide range of test parameters.

The test included a cost of ownership evaluation, in which BLI assessed the cost of printing about 90 square meters with three different document types in highest and draft modes. In all of BLI's cost of ownership print runs in Highest quality and Standard/Speed quality modes, the Canon imagePROGRAF iPF6350 used less ink in terms of net weight than the Epson Stylus Pro 7900.

The Canon model also offers a number of print driver feature advantages over the Epson model, including more media profiles and colour adjustment options, as well as the Color imageRUNNER Enlargement Copy Mode.

## Image Quality

	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
<b>Advantage ✓</b>		
<b>Text</b>		
<b>Fine Lines and Detail</b>	✓	
<b>Solid Fill</b>		
<b>Colour Consistency Over Time</b>		
<b>Colour Gamut</b>	✓	
<b>Colour Photographic Image Reproduction</b>		
<b>Black and White Photographic Image Reproduction</b>		

○ Both devices displayed clear formation of fonts down to 3 point, with minor breakup in font serif

- formation in print head direction. There was no visual difference in clarity of text when viewed with and without magnification. Canon's fonts were marginally heavier than those of the Epson device.
- Both devices produced the 1x1 pixel grid in CMY and K without error.
  - The Canon device output BLI's fine line target with finer (thinner) lines than the Epson device.
  - When using default settings to produce vertical lines perpendicular to the printhead direction, the Canon model exhibited some ink overspray causing some lines to appear slightly fuzzier (when viewed with and without magnification) than those produced by the Epson model. However, this defect was virtually removed when the precision fine line and text feature was enabled, allowing the Canon model to produce fine lines as crisp as those output by the Epson device.
  - The Canon model produced richer yellow and black solids, while the Epson device delivered richer magenta and cyan solids.
  - The devices shared honours in terms of solid optical density variance, with the Epson model displaying greater variance in magenta and black, but lower variance in cyan; yellow variances were identical.
  - The Epson model exhibited better skin tone consistency, while the Canon model displayed greater variance on two of the three skin shades.
  - Neutral grey consistency was the same, with both devices showing equal variance across the page.
  - During BLI's colour drift analysis, the Canon model displayed a peak drift of 2.1 and an average drift of 1.1, compared to the Epson device's peak drift of 2.1 and average drift of 0.9. In the colour drift analysis, the FOGRA39 media wedge is submitted to print before and after productivity and cost of ownership tests, and measured using EFI Colour Verifier software.
  - + The Canon device's colour gamut was 11% larger than that achieved by the Epson model when printed on each vendor's photo semi-gloss media.
  - BLI analysed a wide range of image samples in the colour and greyscale regions output by both devices and found them to be comparable overall.
  - + BLI analysts preferred the skin tones generated on the Canon device in default mode.
  - + The Canon's red space solids were more vibrant than those of the Epson device.

## Print Productivity

	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
Advantage ✓		
First-Page Out	✓	
Throughput Speed (fastest mode)	✓	
Throughput Speed (default mode)	✓	
Throughput Speed (highest-quality mode)	✓	
Job Stream (send multiple jobs to device in fast succession simulating busy network environment)	✓	

- + The Canon model delivered faster first-page-out times than the Epson model from both energy-save mode (456 seconds versus 493 seconds) and the ready state (443 seconds versus 489 seconds).
- + When printing one set and five sets of a single-page A1-size test document in both draft and best modes, the Canon model displayed a speed advantage over the Epson model.
- + When producing BLI's job stream (which simulates a busy network environment, with five jobs, each consisting of high resolution A1 images, sent to the device at one time), the Canon model outperformed the Epson model, delivering all five pages in draft and best modes significantly faster than the Epson model.

## Cost of Ownership

	Canon imagePROGRAF iPF6350 Highest Quality	Epson Stylus Pro 7900 Max. Quality (Level 5)
<b>PORTRAIT</b>		
Overall weight of ink used (grams)	68.6	73.5
Percentage of total ink used averaged across all colours	4.30%	1.76%
<b>FINE ART</b>		
Overall weight of ink used	67.2	100.4
Percentage of total ink used averaged across all colours	4.22%	2.41%
<b>PROOF</b>		
Overall weight of ink used	82.9	99.5
Percentage of total ink used averaged across all colours	5.20%	2.38%

\* Canon tests conducted using 130ml ink cartridges, Epson tests conducted using 350ml ink cartridges.

- + The Canon imagePROGRAF iPF6350 used less ink in terms of net weight than the Epson Stylus Pro 7900 in all BLI cost of ownership print runs using the Highest quality mode.

	Canon imageCLASS iPF6350 Standard Quality	Epson Stylus Pro 7900 Speed (Level 1)
<b>PORTRAIT</b>		
Overall weight of ink used (grams)	53.3	73.7
Percentage of total ink used averaged across all colours	3.34%	1.77%
<b>FINE ART</b>		
Overall weight of ink used	61.7	67.8
Percentage of total ink used averaged across all colours	3.87%	1.62%
<b>PROOF</b>		
Overall weight of ink used	68.3	80.4
Percentage of total ink used averaged across all colours	4.29%	1.93%

\* Canon tests conducted using 130ml ink cartridges, Epson tests conducted using 350ml ink cartridges.

+ In all of the BLI cost of ownership print runs using Standard/Speed quality, the Canon imagePROGRAF iPF6350 used less ink in terms of net weight than the Epson Stylus Pro 7900.

## Device Feature Set

- + The Canon model's two printheads contain more nozzles per colour than the Epson unit's single printhead.
- The Canon unit's ink delivery system dispenses a larger drop size than the Epson ink delivery system.
- The Epson ink cartridge capacity is significantly larger than that of the Canon model.
- Both models offer borderless printing,
- + The Canon model has a larger standard memory capacity (384 MB) than the Epson unit which has 256 MB.
- + The Canon model has an 80-GB hard drive, which allows for the storage of commonly used documents and aids spooling workflow; the Epson device doesn't have a hard drive. The Canon hard drive enables the user to print a single print to check its quality before printing multiple prints directly from the control panel.
- The Canon model has a higher advertised peak energy value (100W) than the Epson model (70W).
- + The Canon model includes a plug-in for Microsoft Office, which provides a wizard that walks users through the process of creating posters from Word, Excel or PowerPoint, avoiding the need for complex resizing. This feature is not offered on the Epson model.
- + The Canon model includes PosterArtist Lite, Canon's software for creating posters and signage in simple steps. Epson does not supply an equivalent product.

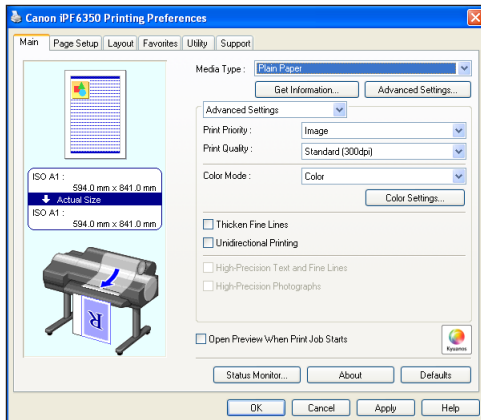
- + The Canon device includes a media mismatch option, which places jobs on hold that can't be printed due to incorrect media being loaded, while jobs that can be completed are printed; the held jobs are printed once the required paper is loaded. The Epson device, which does not offer this capability, continues printing on the mismatched media, which results in ink and media waste.
- + Canon includes a Photoshop Plug-in providing 8- and 16-bit printing with colour management support using Adobe's Colour Engine (ACE). The Photoshop plug-in also offers the option of simulating a printing press colour space. Epson does not have this feature, and is limited to the 8-bit support as offered by the Microsoft XP operating platform.
- + Canon includes an accounting feature providing a log of each job and related ink consumption information. Epson does not offer such a feature.

## Driver Feature Set

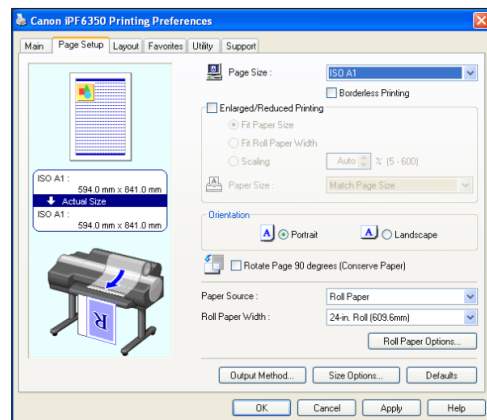
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- + The Canon driver includes 65 media profiles versus 30 for the Epson driver.
- + The Canon driver includes a watermark capability; the Epson driver does not.
- + The Canon driver also includes sharpen text and thicken fine lines image enhancement options; the Epson driver offers only sharpen text.
- Both the Canon and Epson drivers offer N-up (up to 16 and 4, respectively) and poster printing (2 x 2 and 4 x 4, respectively) capabilities.
- The page-stamping capabilities of both the Canon and Epson driver include date and user name. The Canon driver adds page number, while the Epson driver adds time, printer name, comment, document name and print settings.
- + The Canon driver includes a utility, Colour imageRUNNER Enlargement Copy Mode, which allows users to integrate a Canon MFP device or other scanner with the imagePROGRAF iPF6350. Documents scanned by the Canon MFP are automatically routed to a hot folder, which is monitored by the imagePROGRAF iPF6350 driver. Users can also set up other scanners to route files directly to the hot folder. The image is then resized and printed, offering a fast, easy-to-use poster creation tool for office users. There is no such feature offered to Epson users.
- + The Canon model's device status monitor can be accessed directly from the front tab of the driver, whereas users of the Epson model must access device status via an icon on the utility tab, which requires more clicks. The status monitor also includes a time to job completion indicator, a feature not matched by Epson.
- + The Canon driver includes a wider selection of simple colour adjustment options, including brightness, contrast, saturation and CMYK sliding scale adjustments. The Epson driver is limited to only CMY with brightness, contrast and saturation control.
- + The Canon driver includes more advanced colour-matching capabilities, including the ability to match ICC profiles and select the rendering intent based on different elements in the document. The Epson model offers limited colour-matching options, with no rendering-intent options.
- + The Canon driver includes a unidirectional print selection, whereas the Epson driver does not.

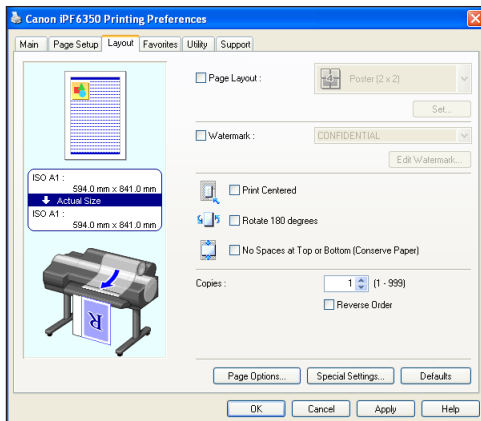
+ Canon includes a Free Layout tool within its printer driver which provides easy drag and drop layout or jobs, simplifying nesting and other print layout tasks.



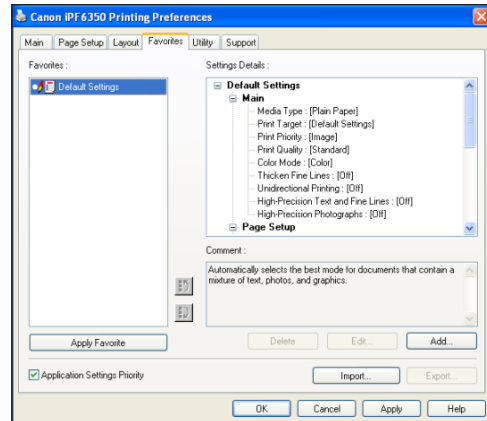
Canon Print Driver Main Tab



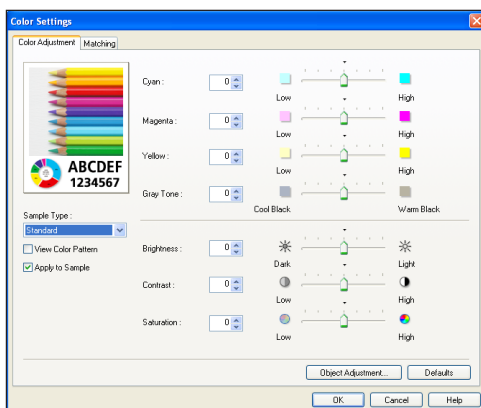
Canon Print Driver Page Setup Tab



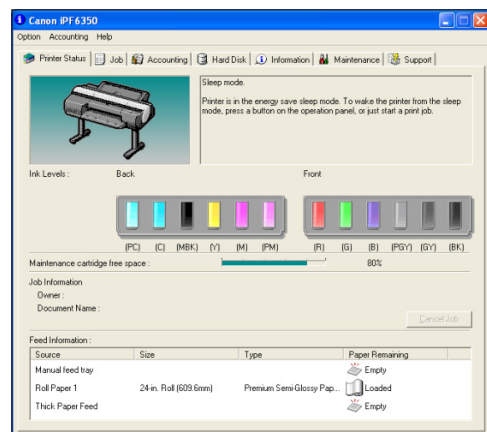
Canon Print Driver Layout Tab



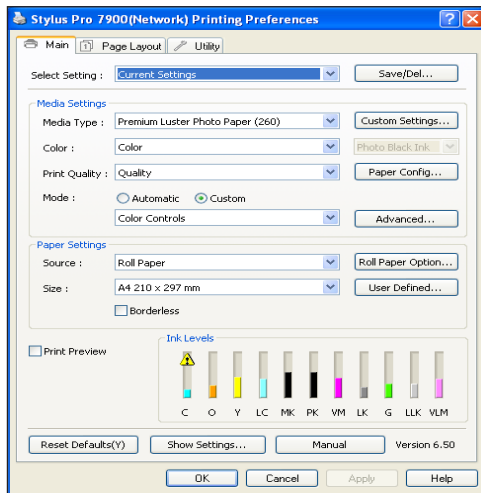
Canon Print Driver Favourites Tab



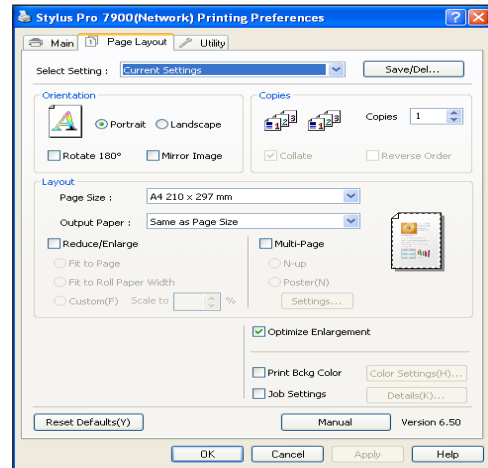
Canon Print Driver Colour Adjustment Tab



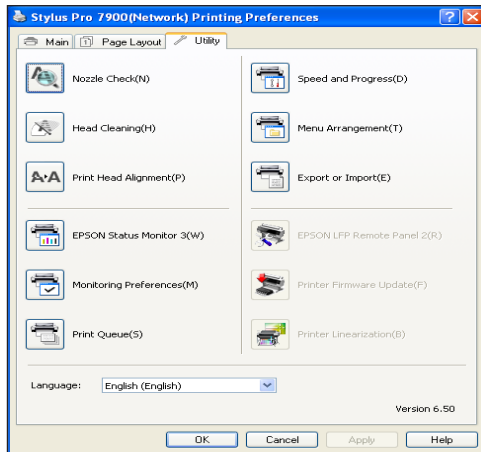
Canon Status Monitor



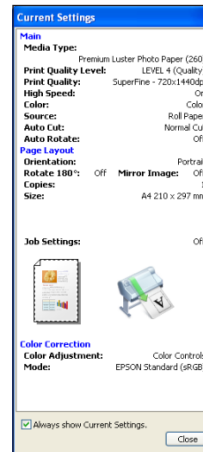
Epson Print Driver Main Tab



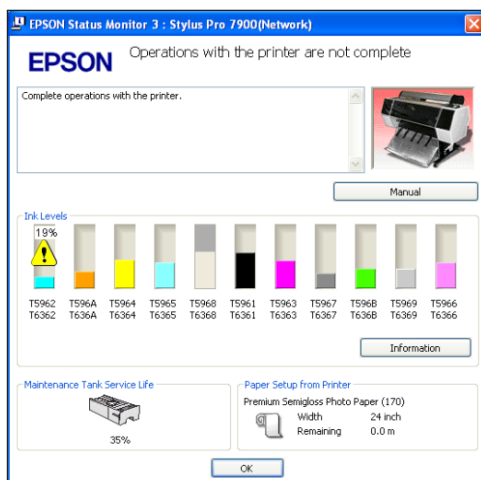
Epson Print Driver Page Layout Tab



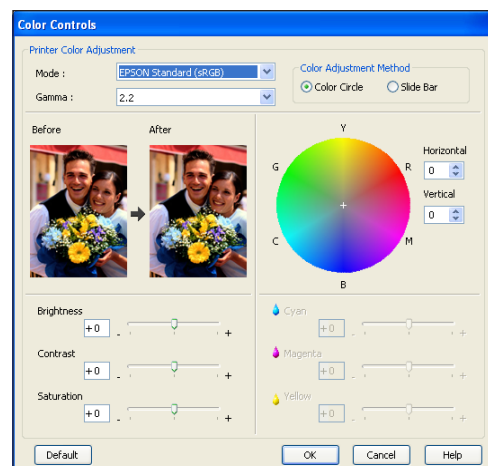
Epson Print Driver Utility Tab



Epson Print Driver Current Settings



Epson Status Monitor



Epson Print Driver Colour Adjustments Tab

## Supporting Test Data

### HEAVY WORKLOAD JOB STREAM PRODUCTIVITY TIME (IN SECONDS)

Sets/Mode	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
1/Draft mode	1,582.88	1,767.03
1/Normal mode	2,571.84	2,453.31
1/Best mode	3,156.57	4,500.25

BLI's heavy workload job stream consists of five high resolution Giclée A1 size images. This test replicates the type of traffic a typical wide-format device might experience in a real-world, multi-user environment. All of the files are submitted to the device and sent to the printer as a group, at which time the stopwatch begins; timing ends when the last page of the last file exits the device. Both devices were loaded with 610 mm rolls, with each file set to auto-rotate to save media. This test was conducted in Draft, Normal and Best modes with 250gsm semi-gloss coated stock selected in each print driver.

### FIRST-PAGE-OUT TIME AFTER A WEEKEND OF NON-USE (IN SECONDS)

Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
456.32	493.41

### FIRST-PAGE-OUT TIME FROM READY STATE (IN SECONDS)

Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
443.82	489.60

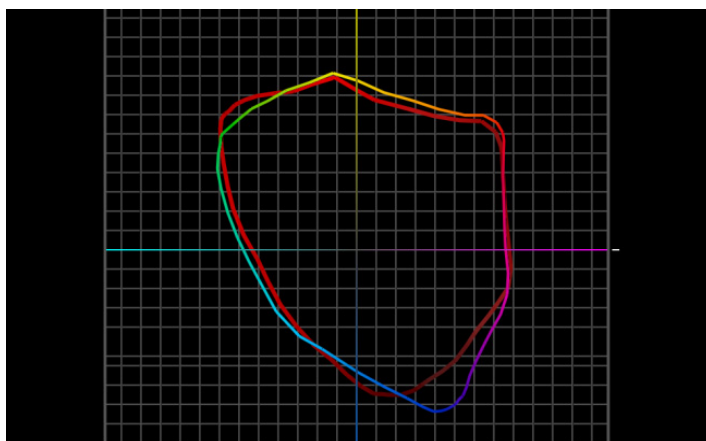
First-page-out times are achieved by sending an A1-size TIFF file to print, timing from release to page out with the drivers set to standard/normal setting.

### A1 FIRST-PAGE-OUT AND THROUGHPUT PRODUCTIVITY (IN SECONDS)

	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
First page out: draft	292.97	336.75
Five pages out: draft	1,526.02	2,030.97
First page out: normal	443.82	489.60
Five pages out: normal	2,558.94	2,504.18
First page out: best	575.44	912.86
Five pages out: best	2,913.47	4,470.62

The single-page A1-size TIFF test file was printed on 250gsm semi-gloss paper with the device driver set to draft, normal and best mode. The actual time indicated is the time it took to RIP, image and deliver the test document to the collection bin.

### COLOUR GAMUT COMPARISON



Epson Stylus Pro 7900 colour gamut in best quality settings (in red) versus Canon imagePROGRAF iPF6350 colour gamut in highest quality settings (in colour)

## SOLID DENSITY ASSESSMENT

Cyan		
Density block	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
1	0.97	1.04
2	0.98	1.06
3	0.99	1.06
4	0.97	1.05
5	0.99	1.06
6	0.98	1.06
7	0.96	1.05
8	0.97	1.06
9	0.97	1.06
MAX. DENSITY	0.99	1.06
MIN. DENSITY	0.96	1.04
DRIFT	0.03	0.02

Magenta		
Density block	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
1	1.68	1.72
2	1.68	1.72
3	1.69	1.73
4	1.69	1.72
5	1.69	1.72
6	1.69	1.73
7	1.68	1.72
8	1.68	1.71
9	1.69	1.72
MAX. DENSITY	1.69	1.73
MIN. DENSITY	1.68	1.71
DRIFT	0.01	0.02

Yellow		
Colour Block	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
1	1.05	1.01
2	1.05	1.01
3	1.04	1.01
4	1.05	1.02
5	1.04	1.02
6	1.04	1.02
7	1.05	1.00
8	1.04	1.01
9	1.03	1.01
MAX. DENSITY	1.05	1.02
MIN. DENSITY	1.03	1.00
DRIFT	0.02	0.02

Black		
Colour Block	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
1	2.14	1.78
2	2.14	1.82
3	2.14	1.80
4	2.13	1.79
5	2.15	1.82
6	2.15	1.81
7	2.13	1.78
8	2.14	1.82
9	2.13	1.81
MAX. DENSITY	2.15	1.82
MIN. DENSITY	2.13	1.78
DRIFT	0.02	0.04

Note: Solid density measurements are based on nine readings taken from a BLI proprietary PDF test target file comprising four A1-sized solid coverage documents of each of the CMYK colours with the driver set to best quality output printing on to the manufacturer's own brand of 250gsm semi-gloss media. Density was measured using an XRite 508 densitometer.

## SKIN TONE AND NEUTRAL GREY CONSISTENCY

Skin Tone 1 (C=6, M=15, Y=16, K=0)		
Colour Block	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
2	0.1	0.1
3	0.4	0.2
4	0.2	0.0
5	0.3	0.1
6	0.3	0.3
7	0.3	0.2
8	0.3	0.1
9	0.3	0.2
Max. Delta E Variance	0.40	0.30

Skin Tone 2 (C=30, M=63, Y=75, K=0)		
Colour Block	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
2	0.3	0.1
3	0.3	0.1
4	0.3	0.1
5	0.3	0.4
6	0.4	0.3
7	0.3	0.3
8	0.4	0.1
9	0.2	0.2
Max. Delta E Variance	0.40	0.40

Skin Tone 3 (C=19, M=33, Y=50, K=0)		
Colour Block	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
2	0.3	0.3
3	0.4	0.1
4	0.3	0.3
5	0.4	0.4
6	0.4	0.4
7	0.3	0.2
8	0.5	0.2
9	0.4	0.2
Max. Delta E Variance	0.50	0.40

Neutral Grey		
Colour Block	Canon imagePROGRAF iPF6350	Epson Stylus Pro 7900
2	0.3	0.3
3	0.4	0.3
4	0.1	0.5
5	0.4	0.5
6	0.1	0.5
7	0.2	0.3
8	0.4	0.4
9	0.5	0.4
Max. Delta E Variance	0.50	0.50

Note: Skin tone and neutral grey consistency measurements are based on nine readings taken from a BLI proprietary PDF test target file comprising four A1-sized solid coverage documents of three skin tones and a neutral grey with the best print quality setting selected in the driver and the target printed on the manufacturer's own brand of 250gsm semi-gloss media. 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 GretagMacBeth EyeOne Share colour comparison software.

## DEVICE FEATURE SET

	Canon imagePROGRAF iPF6350	Advantage		Epson Stylus Pro 7900
Max print quality (dpi)	2400 x 1200		✓	2880 x 1440
Number of inks	12 (photo cyan, cyan, matte black, yellow, magenta, photo magenta, red, green, blue, photo grey, grey, black)	✓		11 (cyan, orange, yellow, light cyan, matte black, photo black, vivid magenta, light black, green, light black, vivid light magenta)
Replace ink tanks during operation	No			No
Ink-drop size	4 pl per colour		✓	3.5 pl per colour
Ink cartridge capacity	90ml (starter set)/ 130ml		✓	110ml (starter set)/ 150, 350 and 700ml
Number of nozzles	30,720	✓		3,600
Nozzles per colour	2,560	✓		360
Number of printheads	2	✓		1
Line accuracy	INA			INA
Minimum line width	INA			INA
Minimum print margins	Borderless			Borderless
Maximum outside diameter of roll paper	150mm			150mm
Maximum media thickness	1.5mm			1.5mm
Maximum cut-sheet media length	1.6m			INA
Maximum media width	24"			24"
Media loading	Front			Front
Optional media handling	No			No
Sheet fed compatibility	Yes			Yes
Standard RAM (MB)	384	✓		256
Hard drive	80 GB	✓		None
Interface	Gigabit Ethernet / USB standard	✓		Ethernet 10Base-T/100Base-TX Ethernet /USB standard
PDL	GARO (Canon Proprietary)			Epson Proprietary
Net weight	66Kg	✓		84.5Kg
Power consumption when in standby	6W or less (standby) 1W or less (power off)	✓		16W or less (Standby) 1W or less (Power off)
Power consumption when active	100W or less		✓	70W maximum
Acoustic noise	Operation 47 dB or less	✓		Less than 50 dB

INA: Information Not Available

## DRIVER FEATURE SET

	Canon imagePROGRAF iPF6350	Advantage		Epson Stylus Pro 7900
Print quality settings	3		✓	5
Economy mode	No			No
High precision Text/Line Mode	Yes	✓		No
Predefined profiles	6	✓		5
Overview of profile settings provided	Yes			Yes
Media profiles	65	✓		30
Image Quality optimized for options	Image / Line drawings / Office doc	✓		None
Watermark	Yes	✓		No
Sharpen text	Yes			Yes
Thicken fine lines	Yes	✓		No
Mirror image	Yes			Yes
Multi-up printing	Yes (up to 16)	✓		Yes (up to 4)
Poster print mode	Yes (2 x 2)		✓	Yes (4 x 4)
Page stamping	Yes (Date / user name / page number)		✓	Yes (Date/time/user name/printer name/comment/document name/print settings)
Image rotation	Yes			Yes
Print preview	Yes			Yes
Link to device Web server from driver	Yes (from status monitor icon on first tab)	✓		No
CMYK balance adjustment	Yes	✓		Yes (only CMY)
Brightness adjustment	Yes			Yes
Contrast adjustment	Yes			Yes
Saturation adjustment	Yes			Yes
Advanced colour management options	Driver-matching mode, ICC-matching mode, driver ICM mode, host ICM mode, rendering-intent options in each mode for image, graphics and text elements	✓		Options for Epson Standard (sRGB), Adobe RGB or Charts and Graphs
Disable automatic cutter	Yes			Yes
Unidirectional printing	Yes	✓		No
Integration with MFP and scanners	Yes, Colour imageRUNNER Enlargement Copy Mode and associated hot folder	✓		No

## Cost of Ownership

**TABLE 1**

Amount of Ink in Each Canon imagePROGRAF iPF6350 Cartridge (in grams) using 130ml ink cartridges												
	PC	C	MBK	Y	M	PM	R	G	B	PGY	GY	BK
Weight of cartridge prior to installation	172.5	172.9	173.6	171.2	172.2	171.2	172.2	174.7	171.9	171.4	171.5	171.3
Weight of cartridge at end of life	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4
Net weight of ink	133.1	133.5	134.2	131.8	132.8	131.8	132.8	135.3	132.5	132.0	132.1	131.9
Total Ink Weight across 12 cartridges												1,593.8

**TABLE 2**

Amount of Ink in Each Epson Stylus Pro 7900 Cartridge (in grams) using 350ml ink cartridges												
	C	OR	Y	LC	MK	PK	VM	LK	G	LLK	VLM	
Weight of cartridge prior to installation	590.6	592.8	594.0	585.3	592.3	594.1	595.1	588.9	589.1	586.1	591.4	
Weight of cartridge at end of life	211.4	211.4	211.4	211.4	211.4	211.4	211.4	211.4	211.4	211.4	211.4	
Net weight of ink	379.2	381.4	382.6	373.9	380.9	382.7	383.7	377.5	377.7	374.7	380.0	
Total Ink Weight across 11 cartridges											4,174.3	

**TABLE 3**

Ink Used in 10-Print Run of BLI's A1 Portrait Test Document on the Canon imagePROGRAF iPF6350 in Best Image Quality Mode (in grams)												
	PC	C	MBK	Y	M	PM	R	G	B	PGY	GY	BK
Net weight of ink used in print run	2.7	2.8	0.8	5.2	5.0	7.6	5.9	1.3	2.9	5.2	21.6	7.6
Net weight of ink in cartridge	133.1	133.5	134.2	131.8	132.8	131.8	132.8	135.3	132.5	132.0	132.1	131.9
Percentage of ink used in test	2.03	2.10	0.60	3.95	3.77	5.77	4.44	0.96	2.19	3.94	16.35	5.76
Overall weight of ink used												68.6
Total ink weight across 12 cartridges												1,593.8
Percentage of total ink used averaged across all colours												4.30%

**TABLE 4**

Ink Used in 10-Print Run of BLI's A1 Portrait Test Document on the Epson Stylus Pro 7900 in Best Image Quality Mode (in grams)											
	C	OR	Y	LC	MK	PK	VM	LK	G	LLK	VLM
Net weight of ink used in print run	1.8	4.1	3.1	0.6	0.2	1.9	4.9	26.0	1.7	17.6	11.6
Net weight of ink in cartridge	379.2	381.4	382.6	373.9	380.9	382.7	383.7	377.5	377.7	374.7	380.0
Percentage of ink used in test	0.47	1.07	0.81	0.16	0.05	0.50	1.28	6.89	0.45	4.70	3.05
Overall weight of ink used											73.5
Total ink weight across 11 cartridges											4,174.3
Percentage of total ink used averaged across all colours											1.76%

**TABLE 5**

Ink Used in 10-Print Run of BLI's A1 Portrait Test Document on the Canon imagePROGRAF iPF6350 in Draft Mode (in grams)												
	PC	C	MBK	Y	M	PM	R	G	B	PGY	GY	BK
Net weight of ink used in print run	1.0	0.9	0.1	3.7	3.7	5.1	6.8	0.8	1.0	4.6	21.8	3.8
Net weight of ink in cartridge	133.1	133.5	134.2	131.8	132.8	131.8	132.8	135.3	132.5	132.0	132.1	131.9
Percentage of ink used in test	0.75	0.67	0.07	2.81	2.79	3.87	5.12	0.59	0.75	3.48	16.50	2.88
Overall weight of ink used												53.3
Total ink weight across 12 cartridges												1,593.8
Percentage of total ink used averaged across all colours												3.34%

**TABLE 6**

Ink Used in 10-Print Run of BLI's A1 Portrait Test Document on the Epson Stylus Pro 7900 in Draft Mode (in grams)											
	C	OR	Y	LC	MK	PK	VM	LK	G	LLK	VLM
Net weight of ink used in print run	1.0	2.9	3.9	0.4	0.1	1.8	5.7	20.0	5.8	14.6	17.5
Net weight of ink in cartridge	379.2	381.4	382.6	373.9	380.9	382.7	383.7	377.5	377.7	374.7	380.0
Percentage of ink used in test	0.26	0.76	1.02	0.11	0.03	0.47	1.49	5.30	1.54	3.90	4.61
Overall weight of ink used											73.7
Total ink weight across 11 cartridges											4,174.3
Percentage of total ink used averaged across all colours											1.77%

**TABLE 7**

Ink Used in 10-Print Run of BLI's A1 Fine Art Test Document on the Canon imagePROGRAF iPF6350 in Best Image Quality Mode (in grams)												
	PC	C	MBK	Y	M	PM	R	G	B	PGY	GY	BK
Net weight of ink used in print run	3.2	5.8	0.5	14.1	1.3	4.8	2.0	6.7	2.2	7.1	16.4	3.1
Net weight of ink in cartridge	133.1	133.5	134.2	131.8	132.8	131.8	132.8	135.3	132.5	132.0	132.1	131.9
Percentage of ink used in test	2.40	4.34	0.37	10.70	0.98	3.64	1.51	4.95	1.66	5.38	12.41	2.35
Overall weight of ink used												67.2
Total ink weight across 12 cartridges												1,593.8
Percentage of total ink used averaged across all colours												4.22%

**TABLE 8**

Ink Used in 10-Print Run of BLI's A1 Fine Art Test Document on the Epson Stylus Pro 7900 in Best Image Quality Mode (in grams)											
	C	OR	Y	LC	MK	PK	VM	LK	G	LLK	VLM
Net weight of ink used in print run	3.0	1.7	12.7	18.5	5.8	0.0	2.1	13.1	8.1	13.3	22.1
Net weight of ink in cartridge	379.2	381.4	382.6	373.9	380.9	382.7	383.7	377.5	377.7	374.7	380.0
Percentage of ink used in test	0.79	0.45	3.32	4.95	1.52	0.00	0.55	3.47	2.14	3.55	5.82
Overall weight of ink used											100.4
Total ink weight across 11 cartridges											4,174.3
Percentage of total ink used averaged across all colours											2.41%

**TABLE 9**

Ink Used in 10-Print Run of BLI's A1 Fine Art Test Document on the Canon imagePROGRAF iPF6350 in Draft Mode (in grams)												
	PC	C	MBK	Y	M	PM	R	G	B	PGY	GY	BK
Net weight of ink used in print run	2.4	11.5	1.9	19.5	2.1	2.9	3.4	6.5	3.0	3.1	4.7	0.7
Net weight of ink in cartridge	133.1	133.5	134.2	131.8	132.8	131.8	132.8	135.3	132.5	132.0	132.1	131.9
Percentage of ink used in test	1.80	8.61	1.42	14.80	1.58	2.20	2.56	4.80	2.26	2.35	3.56	0.53
Overall weight of ink used												61.7
Total ink weight across 12 cartridges												1,593.8
Percentage of total ink used averaged across all colours												3.87%

**TABLE 10**

Ink Used in 10-Print Run of BLI's A1 Fine Art Test Document on the Epson Stylus Pro 7900 in Draft Mode (in grams)											
	C	OR	Y	LC	MK	PK	VM	LK	G	LLK	VLM
Net weight of ink used in print run	5.5	2.8	14.6	7.0	1.7	0.1	2.7	11.1	6.0	10.5	5.8
Net weight of ink in cartridge	379.2	381.4	382.6	373.9	380.9	382.7	383.7	377.5	377.7	374.7	380.0
Percentage of ink used in test	1.45	0.73	3.82	1.87	0.45	0.03	0.70	2.94	1.59	2.80	1.53
Overall weight of ink used											67.8
Total ink weight across 11 cartridges											4,174.3
Percentage of total ink used averaged across all colours											1.62%

**TABLE 11**

Ink Used in 10-Print Run of BLI's A1 Proof Test Document on the Canon imagePROGRAF iPF6350 in Best Image Quality Mode												
	PC	C	MBK	Y	M	PM	R	G	B	PGY	GY	BK
Net weight of ink used in print run	1.4	3.0	1.0	9.6	1.5	4.6	3.0	0.9	1.5	5.1	22.9	28.4
Net weight of ink in cartridge	133.1	133.5	134.2	131.8	132.8	131.8	132.8	135.3	132.5	132.0	132.1	131.9
Percentage of ink used in test	1.05	2.25	0.75	7.28	1.13	3.49	2.26	0.67	1.13	3.86	17.34	21.53
Overall weight of ink used												82.9
Total ink weight across 12 cartridges												1,593.8
Percentage of total ink used averaged across all colours												5.20%

**TABLE 12**

Ink Used in 10-Print Run of BLI's A1 Proof Test Document on the Epson Stylus Pro 7900 in Best Image Quality Mode (in grams)											
	C	OR	Y	LC	MK	PK	VM	LK	G	LLK	VLM
Net weight of ink used in print run	1.7	5.5	7.6	8.0	0.2	44.7	3.0	8.9	5.5	11.5	2.9
Net weight of ink in cartridge	379.2	381.4	382.6	373.9	380.9	382.7	383.7	377.5	377.7	374.7	380.0
Percentage of ink used in test	0.45	1.44	1.99	2.14	0.05	11.68	0.78	2.36	1.46	3.07	0.76
Overall weight of ink used											99.5
Total ink weight across 11 cartridges											4,174.3
Percentage of total ink used averaged across all colours											2.38%

**TABLE 13**

Ink Used in 10-Print Run of BLI's A1 Proof Test Document on the Canon imagePROGRAF iPF6350 in Draft Mode												
	PC	C	MBK	Y	M	PM	R	G	B	PGY	GY	BK
Net weight of ink used in print run	1.3	4.1	1.0	7.8	1.4	3.6	2.4	0.6	3.2	2.8	11.1	29.0
Net weight of ink in cartridge	133.1	133.5	134.2	131.8	132.8	131.8	132.8	135.3	132.5	132.0	132.1	131.9
Percentage of ink used in test	0.98	3.07	0.75	5.92	1.05	2.73	1.81	0.44	2.42	2.12	8.40	21.99
Overall weight of ink used												68.3
Total ink weight across 12 cartridges												1,593.8
Percentage of total ink used averaged across all colours												4.29%

**TABLE 14**

Ink Used in 10-Print Run of BLI's A1 Proof Test Document on the Epson Stylus Pro 7900 in Draft Mode (in grams)											
	C	OR	Y	LC	MK	PK	VM	LK	G	LLK	VLM
Net weight of ink used in print run	0.8	5.1	6.2	5.5	0.0	38.2	1.7	3.2	5.3	12.1	2.3
Net weight of ink in cartridge	379.2	381.4	382.6	373.9	380.9	382.7	383.7	377.5	377.7	374.7	380.0
Percentage of ink used in test	0.21	1.34	1.62	1.47	0.00	9.98	0.44	0.85	1.40	3.23	0.61
Overall weight of ink used											80.4
Total Ink Weight across 11 cartridges											4,174.3
Percentage of total ink used averaged across all colours											1.93%

## Cost of Ownership Test Methodology Overview

Buyers Lab's ink consumption analysis was conducted using three document types (Portrait, Fine Art and Proof). Each document was formatted as a TIF, sized at ISO A1 and printed in Best Image Quality Mode and Draft Mode. The Portrait document was printed on 250gsm semi-matt photo paper. The Fine Art document was printed on water resistant art canvas. The Portrait document was printed on proofing paper.

The Canon imagePROGRAF iPF6350 was installed in BLI's lab with the latest level of firmware and connected to a Windows XP Workstation using a 1000BaseT TCP/IP connection.

The Epson Stylus Pro 7900 was installed in BLI's lab with the latest level of firmware and connected to a Windows XP Workstation using a TCP/IP connection.

Before installing the ink cartridges, BLI technicians weighed and recorded the weight of each with all packaging removed. At the end of each 10-print test run the cartridges were weighed again and the resulting weight of ink used for the test run calculated for each colour.

For the Canon imagePROGRAF iPF6350, three of the 130ml cartridges were then run to exhaustion and the average weight of the empty cartridges was used to determine the total weight of ink across all 12 cartridges.

For the Epson Stylus Pro 7900 three of the 350ml cartridges were then run to exhaustion and the average weight of the empty cartridges was used to determine the total weight of ink across all eleven cartridges.

The percentage of ink used per cartridge was calculated by dividing the net weight of ink used in the print run by the overall weight of ink in each cartridge and multiplying by 100. The results are found in Tables 1 to 14. The percentage of total ink used per printer was calculated by adding the percentages used of each of the cartridges and dividing by the number of cartridges.



Fine Art Test Document



Portrait Test Document



Proof Test Document

## Test Environment

Testing was conducted in BLI's European test lab, in an atmospherically controlled environment monitored by a 24/7 Dickson Temperature/RH chart recorder, ensuring that typical office conditions were maintained. All paper used in testing was allowed to acclimatize inside the atmospherically controlled test facility for a minimum of 12 hours before being used.

## Test Equipment

BLI's dedicated test network in Europe, consisting of Windows 2007 server, Windows XP workstations, 10/100/1000BaseTX network switches and CAT5e cabling.

## Test Procedures

The test methods and procedures employed by BLI in its lab testing include BLI's proprietary procedures and industry-standard test procedures. In addition to a number of proprietary test documents, BLI uses industry standard files including an IT8 test file and an ASTM monochrome test document for evaluating black image quality. In addition to a visual observation, colour print quality and gamut size is evaluated using a 1,400-patch profile software tool from Colour Confidence that was read using an EFI ES-1000 colour spectrophotometer and analysed using Chromix ColorThink Pro 3.0 software. Density of black and colour output was measured using an X-Rite 508 densitometer.

## About Buyers Laboratory Inc.

For 48 years, Buyers Lab (BLI) has been the leading independent office-equipment testing lab and business consumer advocate. In addition to publishing the industry's most comprehensive and accurate test reports on office document imaging devices, each representing months of exhaustive hands-on testing in BLI's US and UK laboratories, the company has been the leading source of competitive intelligence for industry professionals on copiers, printers, fax machines, scanners, duplicators, wide format devices and multifunctional products. The company's databases cover over 12,000 products globally and have a long-standing reputation for being the industry's most trustworthy and complete source for specifications and side-by-side comparisons, all of which are available as part of bliQ, BLI's Web-based encyclopedic resource. Subscribers also have access to BLI's renowned Lab Test Reports, First Look Reports, Solutions Reports, Environmental Reports, news articles and a complete library of manufacturer's product literature, as well as valuable tools including a Product Configurator and Total Cost of Ownership (TCO) Calculator.

Business consumers and manufacturers can also select from a vast array of confidential for-hire private testing services that include document imaging device beta and pre-launch testing, performance certification testing, consumables testing (such as toner, ink and photoconductors) and software and solutions and print media testing (including virgin and recycled papers).

For more information on Buyers Laboratory, please call David Sweetnam on +44(0) 118 977 2000, visit [www.buyerslab.com](http://www.buyerslab.com), or e-mail [david.sweetnam@buyerslab.com](mailto:david.sweetnam@buyerslab.com).