

**Canon**

**imagePROGRAF iPF8000**  
**COMPETITIVE BRIEF**

 **imagePROGRAF®**  
**iPF8000**

**REDEFINING LARGE-FORMAT PRINTING**



## INTRODUCTION

The Canon brand has long been synonymous with high-quality digital imaging. Investing more than \$2 billion dollars annually in Research and Development (R&D), the depth of Canon's commitment to innovation is demonstrated by the company's consistent ranking among the top global corporations receiving U.S. patents.

It makes sense that the technology leader in photography and graphic arts solutions would also be at the forefront of photo quality large-format printing systems. Incorporated into the imagePROGRAF iPF8000 solution is Canon's unique understanding of photography, color science, and printing to deliver an ultra-high-quality, high-speed printer that fully integrates with the way professionals create, process, and print large-format graphics.

Based on proven principles of color science, the iPF8000 printer's twelve-color ink system with LUCIA™ pigment ink starts with the essential colors of cyan, magenta, yellow, and black, and expands the color space with red, green, and blue. Then, it adds photo and gray tones for an enhanced color pallet that is manageable, accurate, and reliable with virtually unlimited creative possibilities.

At the heart of the iPF8000 printer's print engine is Canon's propriety two 1-inch print heads and high-speed L-COA processor. The two print heads channel all twelve ink lines through a total of 30,720 nozzles. The Canon iPF8000 printer has nearly two and a half times more nozzles than HP's Z3100 printer and twenty times more nozzles than Epson's 9800 printer. More nozzles mean that more drops can be ejected with each pass meaning that the iPF8000 printer will consistently print high-quality images, in faster print modes. The L-COA processor (Large format printer COmmon Architecture) handles the high-volume 12-color data processing functions with amazing speed while managing the two print heads to optimize image quality and production speed.

Every iPF8000 large-format printer system comes with software solutions specifically designed to help professionals create a versatile, integrated workflow for maximum control and productivity.

Canon offers customers more choices and control over their imaging processes to help them get their work done more effectively and efficiently than ever before. From input to output, Canon delivers diverse technologies that enhance all aspects of photo imaging, workflow, and large-format printing.

## WHAT MAKES THE imagePROGRAF iPF8000 UNLIKE OTHER 44" LARGE-FORMAT PRINTERS?

With the introduction of the imagePROGRAF iPF8000 printer Canon has leaped ahead of the competition in high-value print applications such as photo enlargement, fine art reproductions, and proofing. Among its many strengths the iPF8000 printer is clearly distinguished from its competitors by the following attributes:

- 44" wide printing is ideal for most photo, fine art, and prepress proofing applications.
- The 12-color ink set with LUCIA ink has a large color space that builds on proven principles of color science while enabling a greater range of color tone and depth.
- Red, green, and blue inks expand the color gamut beyond the essential colors (cyan, magenta, yellow, and black) to optimize color reproduction accuracy.
- Photo cyan and magenta help smooth transitions and reduce graininess.
- Black, matte black, gray, and photo gray optimize black density regardless of media type, reduce metamerism, and reproduce gray tones for smooth transitions from white to black and exceptional monochrome photo-quality output.
- Switching between black inks is fully automated based on the type of media being used. No manual intervention is required and no ink is wasted.
- Total ink consumption is minimized because colors in red, green, blue, and gray tones can be generated from these source colors rather than blending higher volumes of multiple inks to simulate the same color effect.
- Canon's unique LUCIA pigmented inks have an extra polymer compound coating to help protect the ink particles from fading for excellent color stability, durability, and longevity.
- Canon's latest generation one-inch imagePROGRAF Series print heads have a true 1200 dpi pitch and are capable of a maximum resolution of 2400 x 1200 dpi.
- With a total of 30,720 nozzles, the iPF8000 printer has more nozzles than its' competitors. More nozzles means fast reliable printing.
- Superfine 4pl ink droplets ensure accurate imaging with excellent detail and clarity.
- The high-speed L-COA processor drives output speed and maintains productivity.
- Large ink tanks (choose either 330ml or 700ml) reduce down time and operator intervention.
- A unique ink system supplies ink from the main tank to a subtank which then feeds the print head. With this system, the main ink tank can be replenished without stopping the printing process.
- Built-in sensors automate adjustment of print head and media feed, as well as detect and compensate for non-firing nozzles.

Included with every imagePROGRAF iPF8000 printer is a suite of software solutions for enhanced image management, improved workflow efficiency, and poster creation.

- Digital Photo Print Pro editing software that simplifies advanced functions such as red-eye correction, dust removal, skin tone improvement, and many other features.
- Print Plug-in for Photoshop® was designed to enable direct printing of 16-bit RGB images directly from Adobe® Photoshop.
- PosterArtist helps users of all levels to create professional looking posters, banners and signage with ease.
- Printer Driver 2006 works with both Windows® and Macintosh® operating systems with easy and advanced setting options that include a Free Layout-Nesting function (PC only). This function enables users to assemble, and print various file formats (Microsoft® Office documents, graphics, and photos) together on a single page without need for the source file's native application. The Printer Driver 2006 also facilitates integration with an imageRUNNER® device for large-format scan-to-print functions.

Refer to the above list of unique selling propositions when positioning the iPF8000 printer in a sale. No other large-format printer on the market today offers this combination of features expertly integrated into a single high-performance printing system. The extraordinary print quality and color range of the iPF8000 printer makes this the premier solution for customers who require unparalleled print quality, reliability, and productivity.

## COMPETITIVE ALTERNATIVES

Let's take a look at the key competitors in the 44" large-format printing marketplace.

### HP DESIGNJET Z3100 44" PHOTOPRINTER

*Note: Production units of the DJ Z3100 are not expected to ship before Spring of 2007.*

**Pros:** This new 44" wide printer from HP with 12 ink channels targets photography, fine art, and prepress proofing applications. Among the device's noteworthy features are an unusual color set, a built-in spectrophotometer, pigment inks, a gloss enhancer, a selection of RIPS, and productivity oriented print utilities. Claims that prints will last up to 200 years without fading and are water resistant on certain media will no doubt attract customers interested in archival printing. Prepress customers producing proofs may also be enticed by the built-in spectrophotometer, compliance with press emulation standards (such as SWOP), and PANTONE® color matching. The \$6295 includes an HP ProPrint Plug-in for Adobe Photoshop, auto swapping of black inks, and a print controller with built-in color management and layout tools.

**Cons:** With a number of uncommon features some customers may be reluctant to experiment with the Z3100 printer before these features have been proven to work.

Making an unusual exception to a basic rule of color science, the Z3100 printer has NO CYAN INK. By eliminating CYAN, HP has veered away from one of the best known principles of color printing, specifically that the four primary colors (cyan, magenta, yellow and black) are essential when reproducing the full color spectrum. If asked, HP might claim that their inclusion of blue and light cyan inks are an adequate substitute for CYAN. However, with virtually all other graphic design applications and systems built on the assumption that a CYAN ink channel is available for CMYK printing, many professionals may not want to risk their money or their customers while HP tries to prove their point.

Instead of CYAN, the Z3100 printer uses the twelfth ink channel for a "gloss enhancer." Early indications are that the gloss enhancer is not an ink color rather an additive for use with glossy media. However, the value of this feature remains unclear.

Another unusual design element of the Z3100 printer is that six of the twelve print channels have nozzles with a 4pl droplet size, while the other six have nozzles with 6pl droplet. With this, HP has made assumptions regarding ink coverage by color channel. Given the infinite variety of possible images it is hard to imagine that this approach will be able to deliver consistently good color management and good ink coverage in all cases.

Between the missing cyan and off balanced configuration of nozzles, it is possible that the spectrophotometer has been built-in to both help generate ICC profiles and help compensate for the many potential color management problems.

With a native resolution of 600 x 600 dpi versus the iPF8000 printer's 1200 x 1200 dpi and only 12,672 nozzles (less than half that of the iPF8000 printer), the Z3100 printer's performance and image quality will likely fall short when compared to the iPF8000 printer. Small ink cartridges (130ml) that are less than half the size of the iPF8000 printer, means that more frequent operator intervention will be required to keep all 12 color channels operating. The iPF8000 printer on the other hand offers a choice of either a 330ml ink tank or a large 700ml for greater productivity.

With so many unusual design features, HP has much to prove with the Z3100 printer. How comfortable customers will be with this printer and how well will it actually perform remains to be seen.

## EPSON STYLUS PRO 9800

**Pros:** Epson targets this 44" wide printer for use by graphic designers, prepress professionals, and photographers. The piezoelectric print heads are capable of producing three different sizes of ink droplets—a feature Epson calls Variable-sized Droplet Technology. Unlike the HP Z3100 printer, which has fixed size print head nozzles, each nozzle in the Epson 9800 printer is capable of producing all three sizes of ink droplets. Epson's design is therefore more adaptive to individual image requirements and may get better overall results than the HP printer. Normal print mode for the Epson 9800 printer is 1440 x 720 dpi and a maximum resolution of 2880 x 1440 make this a reasonably high resolution printer. The eight color ink set includes the expected CMYK combination as well as light cyan, light magenta, light black, and a choice of either photo black or matte black. Epson's pigment inks are durable and color prints are estimated to last over 100 years without fading, and black-and-white prints are claimed not to fade for up to 200 years. The base model 9800 has an MSRP of \$4995 but does not include any value-added software other than the print driver. The 9800 Professional includes a ColorBurst RIP with PANTONE matching and SWOP certification for an extra \$1,000.

**Cons:** There was a time when the Epson 9800 might have been considered state-of-the-art in terms of print quality, however when compared to the highly advanced features of the iPF8000 printer, the Epson 9800 printer may now seem somewhat out-of-date. With only 180 nozzles per color for a total of 1440 nozzles, the Epson printer will print much slower in all print modes than the Canon iPF8000 printer which has 30,720 nozzles. The relatively low number of nozzles also increases demand on each nozzle, thereby shortening print-head life, and increasing the opportunities for mis-prints and errors. The 8-color ink set does not include red, green, or blue and therefore intuitively offers a more limited and less versatile gamut than the iPF8000 printer. Unlike the iPF8000 printer, the Epson 9800 also requires manual switching between matte black and photo black which wastes both ink and operator time. By Epson's own estimates ([www.epson.com](http://www.epson.com) Stylus Pro FAQs) the total ink wasted is about 88ml to 117ml per switch. Switching from one black mode to another therefore wastes a significant amount of ink, money, and time.

### Feature Comparison Chart

Brand:	Canon	Epson	HP	HP
Model	iPF8000	Stylus Pro 9800	Z3100	DJ5500
Width	44"	44"	44"	42"
MSRP	\$5,995	\$4,995	\$6,295	\$7,995
Normal Mode Resolution	1200 x 1200 dpi	1440 x 720 dpi	600 x 600 dpi	600 x 600 dpi
Max Resolution	2400 x 1200 dpi	2880 x 1440 dpi	2400 x 1200 Optimized dpi	1200 x 600 Optimized on glossy media
Size of Ink Droplet	Consistent 4pl	Variable: Smallest is 3.5pl	6 colors with 4pl/6 colors with 6pl	Consistent 12pl
Nozzles Per Color Channel	2,560	180	1,056	N/A
Total Number of Nozzles	30,720	1,440	12,672	N/A
Ink Type	Pigment	Pigment	Pigment	Dye or Pigment
# of Colors	12	8	11	6
Color Set	C,M,Y,K,PC,PM,MK,GY,PGY,R,G,B	C, LC, M, LM, Y, LK, LLK + PK or MK	LC,M,LM,Y, R,G,B, MK,PK,GY,LGY,	C, M, Y, K, LC, LM
Auto-Switching of Black Inks	Yes	No	Yes	No
Ink Supply	330ml or 700ml Tanks	110ml or 220ml Cartridges	69ml or 130ml Cartridges	680ml Cartridges
Included Software	Digital Photo Print Pro, Print Plug-in for Photoshop, PosterArtist, Printer Driver 2006	Epson Printer Driver	HP ProPrint Plug-in for Photoshop, Printer Driver	Printer Driver Only. For an additional \$3000 the DJ5500ps comes with an Adobe Postscript® 3 RIP
Print Quality Control	Built-in Sensors and Automated Adjustment Functions	Built-in Sensors and Automated Adjustment Functions	Built-in Spectrophotometer for Automated ICC Profiling	Automatic Closed Loop Color Calibration

Color Legend: C= Cyan      Mc= Medium Cyan      B= Blue      GY= Grey      K= Black      PC= Photo Cyan  
 PM= Photo Magenta      M= Magenta      MM= Medium Magenta      O= Orange      PGY= Photo Grey      R= Red  
 G= Green      MK= Matte Black      Y= Yellow      Gloss= Gloss Enhancer      LC= Light Cyan      LM= Light Magenta



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