BERTL
OUTSTANDING

Paradigm Imaging Group EIS Supra

Scanning : 6-ips in Black & White; 2-ips Color

Printing: 6 color, 2400 x 1200 dpi, 4 pl droplets

100% INDEPENDENT ANALYSIS

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WIDE FORMAT MFP

The EIS Supra color MFP solution was introduced by Paradigm Imaging Group in 2008 as the company's debut into the wide-format color MFP market. With its 36" wide printing and scanning capability, the EIS Supra color MFP is a mid-sized, performance MFP system aimed at the facility management, CAD/GIS, and reprographics markets.

Paradigm has created a series of professional black and white and color MFP solutions spanning the gamut from less than $8,000 systems to systems costing more than $30,000. This impressive range makes some of the other big vendors' single or dual offerings pale in comparison to Paradigm's solutions.

Paradigm History
The company was originally founded in 1989 as a large-format scanning service bureau specializing in the conversion of paper-based engineering documentation to CAD format.

In the early 1990s, Paradigm's business approach evolved from document imaging services only to a two-pronged approach of providing services and/or a product solution.

In the mid-1990s, Paradigm became a distributor of large-format scanning solutions and then later began developing its own wide format printers by building on its expertise in the wide-format industry.

Seeing a need to fill gaps that current large-format scanning and printing solutions didn't fill, Paradigm began to develop solutions using "best-of-breed" components that addressed evolving market needs. Since 2005, the company has developed and delivered quality wide-format MFP solutions to the market in the United States and Canada.

Paradigm EIS Supra

The EIS Supra consists of *best-of-breed* equipment:
- Canon iPF750 36" wide printer.
- Graphtec SK280 36" wide color scanner.
- Paradigm's Rocket scanner and printer controller.
- ImageFLOW scanning, printing, and copying software.
- A combined ergonomic stand for the scanner, printer, and Rocket controller with keyboard and touch screen monitor.
- One-year on-site warranty in the United States and Canada.

Device Features Summary	
List Price	$16,995
Maximum Print Speed	779 ft²/hour in Fast 379 ft²/hour in Standard 79 ft²/hour in Best Quality
Monochrome Scanning Speed	6 ips at 400 dpi
Color Scanning Speed	2 ips at 400 dpi
Maximum Printing Resolution	2,400 x 1,200 dpi
Maximum Scanning Resolution	Interpolated up to 1200 dpi
Print heads	5 color (C,M,Y,BK, MBKx2) Long-life color print head with 15,360 nozzles: 2,560 nozzles per color CMYK & Matte Black, 5,120 nozzle
Droplet size	4 Pico Liters (pl) (all colors)
Scanning Width	36" Centered / 38" Max. Document Width
Document Thickness	Up to 0.8mm including Carrier sheet
Interface	10/100 BaseT/Tx Ethernet Built-in: USB 2.0 High Speed Optional: IEEE 1394 Firewire

Note: Price includes the Graphtec SK280 scanner, MFP ERGO stand, Canon iPF750 printer, Paradigm's Rocket controller, ImageFLOW software, and one-year on-site warranty in the United States.
ips = inches per second; ipm = images per minute

The Canon iPF750 Printer

The Canon iPF750 printer is designed for the technical market: CAD, AEC, and GIS, as well as front-office environments and graphic-intensive workflows.

Introduction

The Canon iPF750 was introduced at the International Reprographic Association (IRgA) Convention and Trade Show in April 2009 as part of a major Canon release of new four wide-format printers which included the following:

- iPF755 (36")
- iPF750 (36")
- iPF655 (24")
- iPF650 (24")
-

The Canon iPF750's printing technology is comprised of Full Photolithography Ink Jet Nozzle Engineering technology.

The new models are specially designed to meet the demands of the Geographical Information System (GIS); Computer-Aided Design (CAD); Architecture, Engineering, and Construction (AEC); Reprographics; and other Technical Document markets. These new, space-saving printers produce a diverse range of outputs from complex technical documents to spectacular full-color posters, with improved speeds and greater ease of use than ever before.

The introduction of these new models extends Canon's ability to offer an effective, efficiently designed, top-tier, large format printing solution, while helping to increase productivity with many new, user-friendly features. These new versatile, compact models feature a completely front-accessible operation that allows the device to fit in tight office spaces.

Canon's super-high-density one-inch print-head with 15,360 nozzles, ejects tiny 4pl droplets of ink that consistently produce 2400 x 1200 dpi output with fine lines as thin as 0.02mm. Canons exclusive 5-color Reactive Ink set delivers resilient smudge-resistant prints with sharp lines and text, bold colors, and smooth fills. Each ink tank contains 130 mL of ink. Adding to the list of improvements includes a reformulated Magenta ink which provides improved color hues. Productivity being a critical element in today's work environment, the iPF750 helps users meet critical deadlines with its ability to print D/A1 documents in approximately 28 seconds.

The iPF755/650 printers both feature built-in 80 GB hard drives, allowing multiple workstations to send large sets of files directly to the printer and easing the file processing burden on their computers. Canon has also earned ENERGY STAR qualification for their imagePROGRAF iPF750.

Media handling is performed through one roll in the back, and the media size is automatically detected by the iPF750. Furthermore the iPF750 has cut-sheet paper capability. The iPF750 can handle a wide range of different media types, including plain paper, coated, semi-gloss, and high-gloss paper.

The iPF750 printer is fast, with a rated speed of 779 ft^2/hour in Fast Mode, 379 ft^2/hour in Standard Mode, and 79 ft^2/hour in Best Quality Mode. This high level of performance is due to the larger nozzle size for each color, which results in fewer passes required to print.

The Graphtec Sk280 Scanner

The Graphtec Sk280 scanner is a 36" wide color scanner with 600 dpi optical resolution. It is only bundled with one of Paradigm Imaging EIS Supra MFP solutions, and is not sold as a standalone scanner. The scanner is based on Contact Image Sensor (CIS) technology and uses RGB LED light for illumination. One advantage of the LED light illumination source is that the scanner requires no warm-up time, so you can literally walk up to the scanner, turn it on, scan, and turn it off again, thereby saving energy.

The Graphtec SK280 is only sold bundled with the EIS MFP solutions and not sold by itself. The Graphtec SK280 scanner uses five A4 sensors in a zigzag pattern.

Graphtec Sk280 Scanning Speeds
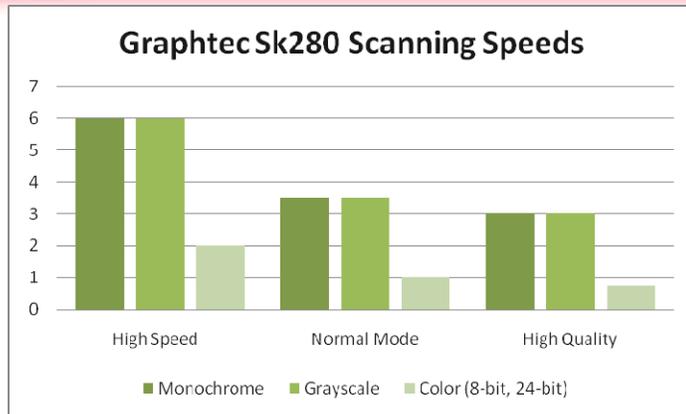
Scanner performance is in the mid-range, with a rated color speed of 2 ips at 400 dpi and black and white speed of 6 ips at 200 dpi, when using High Speed mode. One of the first things BERTL noticed is that, contrary to Graphtec's other scanners, the CIS sensors are located in the top lid of the scanner, so document loading is done face up. This is better than placing documents face down where you can't see the image you are loading.

The Graphtec SK280 scanner cannot be used for scanning thick media, which is a rarely needed requirement anyway. The maximum document thickness supported by the Graphtec Sk280 is up to 0.8mm (including the carried sheet). The Graphtec SK280 scanner is equipped with a USB 2 High speed interface, measures 46.65 x 28.15 x 37.99 inches and weighs approximately 84 lbs (38kg) with the stand.

The Rocket Controller

Paradigm's Rocket controller is the superglue that makes the scanner and the printer work together as a coherent solution. The Rocket controller is a pre-configured PC running Microsoft Windows XP/SP2 Professional and powered by a 2.4 GHz Intel Pentium 4 processor (Intel Core 2 Quad-Core Q6600) with 2 GB (PC2-5300) of memory (expandable to 4 GB and 250 GB hard disk (SATA-150; (7200 rpm) 8 MB Cache. It has a built-in combination CD-RW and DVD-ROM drive and connects through either a 100 MB or 1 GB fast Ethernet connection. The Rocket controller also includes a mini keyboard with touch pad and a 17" LCD touch screen monitor.

According to Paradigm Imaging, the EIS Supra combines: "…best-of-breed technology from Graphtec, Canon, and Paradigm Imaging to produce a state-of-the-art solution for facility management, CAD/GIS, and reprographics. Manage and electronically distribute wide-format documents for technical and graphic arts solutions with our array of EIS wide-format copiers, scanners, printers,

and document imaging workflow software. The EIS Supra large-format scan, copy, and print solution provides maximum flexibility to meet your needs at an affordable price."

Paradigm Support & Upgrade Policy
Paradigm provides a toll-free phone number and e-mail address for customers to obtain support for the EIS Supra solution, as well as free firmware upgrades.

Paradigm Imaging Family of EIS MFP Solutions
The Paradigm Imaging MFP family consists of a versatile range of EIS MFP solutions all addressing different needs and price points in the market. This family consists of:
- EIS Supra
- EIS Turbo
- EIS Ultima II
- EIS Flex
- EIS Solo

The New EIS Supra, which is reviewed in this report, is a 36" wide mid-range color MFP solution.

The EIS Ultima II is the high-end model combining a Canon iPF8000S graphics printer with a fast 42" wide Graphtec color scanner.

The EIS Turbo combines a 36" Graphtec scanner with a fast Seiko 36" wide monochrome LP printer.

The EIS Flex and EIS Solo solutions allow the customer to combine their own scanner and printer solutions into a cohesive MFP system with the ImageFLOW software.

What BERTL Tested

BERTL tested the New EIS Supra Color MFP model with the ERGO stand, Rocket Controller and the ImageFLOW MFP software. The price for the tested equipment was $16,995.

BERTL uses its own standardized test procedure to test all wide-format MFPs, ensuring uniform and independent treatment of wide-format MFPs across the industry.

Our MFP testing procedures focus on features that provide the most benefit for the operator, and we avoid going too deep into the inner features and operations of the actual scanner and printer that form the MFP system. For a detail report of scanner and printer components, please consult BERTL's detailed reports for wide-format scanners and printers.

SETTING UP THE SYSTEM

The EIS Supra MFP system arrives in several difference cardboard boxes, and each major component can be set up and installed individually.

BERTL started with the ERGO stand, which is Paradigm's own universal MFP stand that is both flexible enough to provides a versatile solution for diverse office environments. Scanner height and monitor/keyboard height and angle are adjustable and versatile enough to fit different scanner and printers in the market.

The combined ERGO stand for the scanner and the Rocket controller is easy to set up. The ERGO stand is contained in two cardboard boxes with well-documented assembly instructions. Setting up the stand took about 20 minutes. On top of that, you must set up the Canon printer and the Graphtec SK280 scanner.

The Graphtec SK280 scanner sits on the table-top and the printer slides under the scanner stand. You can adjust the angle height and tilt of the Supra stand to accommodate other printers, the touch screen, and the keyboard.

Within an hour, the full EIS Supra system was ready to use. The Graphtec SK280 scanner, weighing in at only 53 lbs., is light compared to other scanners in the market. The Canon iPF750 printer weighs 139 lbs. (63kg) and the stand which weighs approximately 38 lbs.. Although there are several hardware components to be installed, it is easy enough for most users to complete installation. The EIS Supra has a footprint of only 59" high x 77" long x 36" wide and weighs a total of 223 lbs.

Although the scanner, ERGO stand, and printer setup instructions are found in three different manuals, BERTL found that the directions are clear and easy to follow.

Driver and Utility Installation

The Rocket controller is preloaded with Microsoft Windows XP/SP2 Professional, scanner and printer drivers, as well as the ImageFLOW application that runs the color MFP solution. The only tasks left are to connect the Rocket controller to the Ethernet network interface and finalize the scanner and printer setup, including calibration. The Rocket controller is available with other combinations of scanners and printers.

SK280 Scanner And Calibration

For optimal scanner image quality, calibrate your new scanner before use. The Graphtec SK280 scanner is equipped with black and white point calibration sheet as well as s color calibration sheet. Color calibration is a semi-automated process: after scanning the color calibration sheet, you mark six reference points on the sheet to make sure that the calibration utility knows the exact locations of each of the 1,080 color patches. The scanner calibration process is smooth and should not present any problems for customers. BERTL completed basic calibrations in less than five minutes.
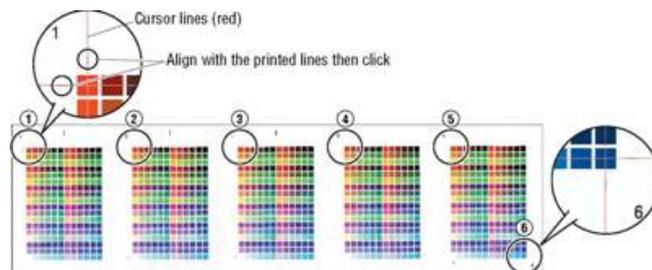
*The Graphtec SK280 scanner color calibration sheet.*

The Graphtec SK280 uses the latest CIS technology with 42-bits of internal color capturing (14-bit grayscale) parsing the best 24-bit color (8-bit grayscale) to the Rocket controller for further processing. The scan line consists of five CIS sensors, each approximately 8.5" wide to provide a 36" wide scanning capability at up to 600 dpi resolution. You place the scanning materials with the image upwards when feeding the scanner. It's very nice that you can see the drawing while feeding it into the scanner. The top scanning speed is 6 ips in black and white at 200 dpi and 2 ips in color also at 400 dpi.

Canon iFP750 Printer & Calibration

The Canon iFP750 printer is a 36" wide, five-color inkjet printer. It contains five 1" print heads with a total of 15,360 nozzles (2,560 nozzles for each CMYK color and 5,120 nozzles for the matte black color). Ink wells have a maximum capacity of 130 mL each. Installation is straightforward as with most printers. You connect the Canon iPF750 printer directly to the Rocket controller through a USB cable or to via Ethernet network interface. The printer is calibrated through the GARO Status Monitor application using the "Maintenance Tab," or directly at the iPF750 printer's control panel.

ImageFLOW PhotoPrint Application

Last, you configure the ImageFLOW software with the combination of scanner and printer in the ImageFLOW PhotoPrint setup and with the printer's Internet Protocol (IP) address (if the printer is not attached locally via the USB interface). ImageFLOW PhotoPrint supports more than 550+ different printers on the market.
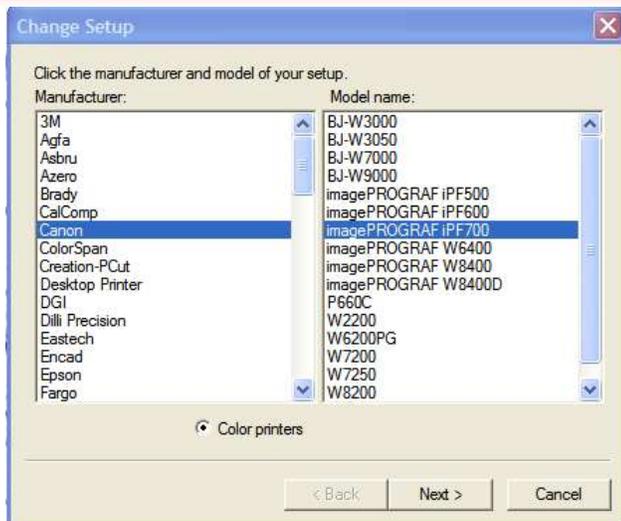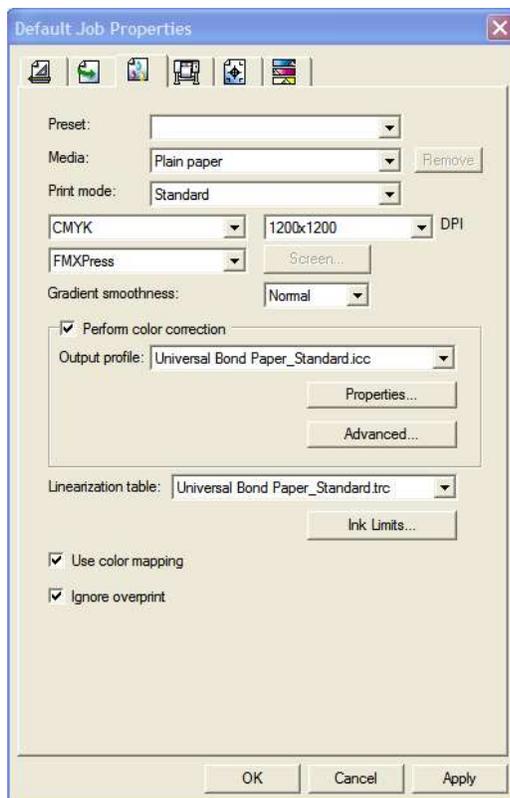
Finding and selecting the right printer out of more than the 550 printers supported is easy.

Setting up the correct media type and color profiles is easy.

What We Liked

- BERTL liked the ERGO stand for the combined solutions and found it to be very versatile, fitting virtually all possible combination of scanners and printers.
- The installation procedure is easy to follow even though it is found in three different setup manuals. It can be performed by anyone in an organization who has average experience in installing new software and hardware on a computer.
- Instructions for assembly and installation are easy to follow with plenty of drawings and instructions.
- Typical setup and assembly time for the complete MFP solution is 60 minutes.

What We Would Like To See

- BERTL would like to see an overall setup assembly instruction manual.
- BERTL would like the scanner calibration to be more fully automated, e.g., automatically find the 6 patch coordinates, instead of requiring the operator to do it manually.

The 36-inch wide imagePROGRAF iPF750 is a revitalizing addition as a replacement for Canon's iPF710/720 printers. This move further bolstered Canon's position in the graphic arts market by offering the 12-color version for highest possible printing fidelity and the 8-color version for higher productivity. Canon continues to offer the ability to replace ink tanks on the fly for uninterrupted operation. Another important change was to add an 80 GB hard disk to the printer. This allows faster printer operations and frees up the PC computer's processing capabilities sooner, thereby increasing the overall printing capacity. Canon also got rid of the annoying problem of needing to replace the maintenance cartridge due to excessive ink spilling over when doing frequent borderless printing and head cleaning procedures.

The imagePROGRAF iPF750's new print head PF-04 features the same nozzle density as PF-03 (print head) with 2,560 nozzles per channel totaling 15,360 nozzles. The new nozzle shape has been improved to minimize ink mist with its shorter droplet tail, while at the same time produces cleaner lines and text.

WHAT WE LIKED

- We like the fast production speed of the iPF750 printer.
- We also liked the capability to replace ink tanks on the fly.
- Canon's *Kyuanos* color-matching, print engine produced consistent print results.
- The Media Configuration tool enables users to specify when a new media type has been loaded.
- The printer is easy to use.

WHAT WE WOULD LIKE TO SEE

- We would like to see an upgrade path from the 8-color iPF750 to the iPF8100 12-color printer.

Print Device Features Summary	
List Price	$4,495
Printer Type	5-Color 36-inch Printer
Number of Nozzles	Total: 15,360
	MBK: 5,120 nozzles
	C, M, Y, BK: 2,560 nozzles each
Nozzle Pitch	1,200 dpi
	Non-firing nozzle detection and compensation
Print Resolution	2,400 x 1,200 dpi (Max)
OS Compatibility	Windows® (2000/XP/Vista 32/64bit)
	Mac (OS10)
Standard Interface	USB 2.0 High-Speed
	10/100/1000 Base-T/TX
Ink Droplet Size	4 picoliter
Ink Capacity	130ml per color
Ink Types	Dye/Pigment Reactive Ink
Color Set	Dye: Cyan, Magenta, Yellow, Black
	Pigment: Matte Black (two channels)
Buffer/Ram	256 MB; Hard Drive: N/A
Media Width	Cut Sheet - 8"- 36" (203.2mm - 914mm)
	Roll Feed - 10" - 36" (254mm - 914mm)
Media Thickness	0.07-0.8mm (2.8-31.4mil)
Maximum Roll Print Length	Roll Feed - 59' (18 meters)
	Cut Sheet - 63" (1.6 meters)
Maximum Media Roll Diameter	5.9" (150mm)
Borderless Printing Width (Roll Media Only)	10", 14", 17", 24" B2 (20.28"/515 mm), A1 (23.38"/594mm), A0 (33.11"841mm), 36"
Paper-Feed Method	Roll Feed: One Roll, Top-loading, Front output
	Cut Sheet: One sheet, Top loading, Front output

Print Driver Functionality

The Canon imagePROGRAF 750 uses Printer Driver 2009 for printing from Windows and Apple computers. The driver properties are logically divided into six main areas:

- Main
- Page Setup
- Layout
- Favorites
- Utility
- Support
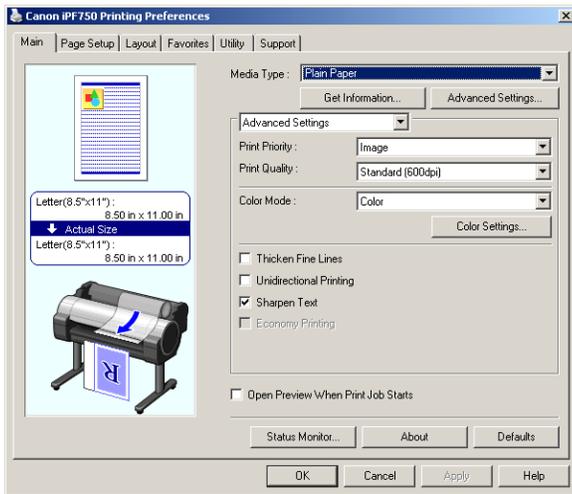
The Canon iPF750's Main tab with advanced settings

The Main tab shows a snapshot of the current settings for printing and can be controlled via Easy Settings or Advanced Settings. The Easy Settings offers a choice of preselected options and is recommended for the inexperienced user, while the Advanced Settings offers more individual choices for print priority, print quality, color mode, color settings, unidirectional printing, thickened lines, and high-precision printing.

On the top row is the media type list supported by Canon, which lists more than 70 different paper types that are directly supported by Canon as well as the default settings of drying time between pages, scans, roll paper margin, cut speed, and printer calibration value for each media.
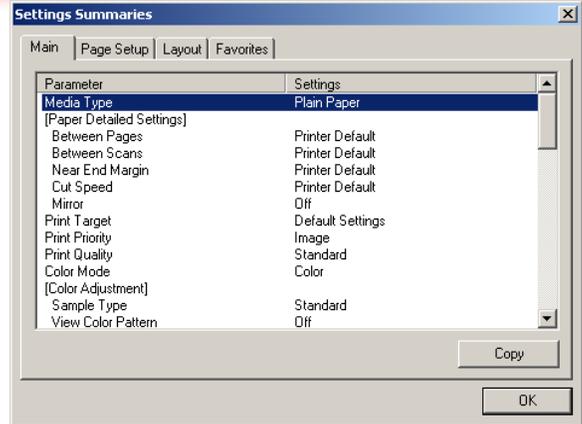
Setting Summaries dialog box

The Advance Settings offer the user the most control of the printing and color settings, where the user can adjust:

- Cyan
- Magenta
- Yellow
- Brightness
- Contrast
- Saturation
- Gray tone adjustment
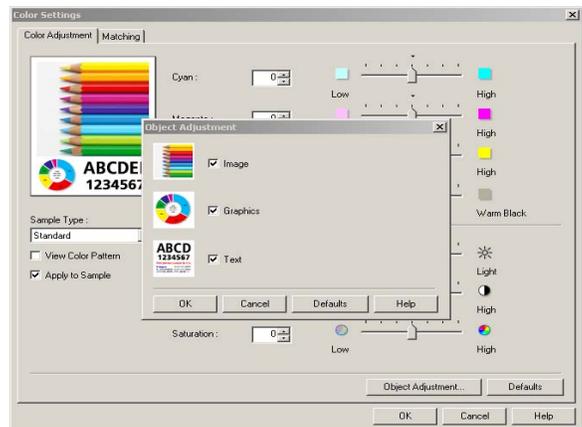
Color Settings dialog box

The dialog box offers a real-time view of any color setting change made to the original. Furthermore to make color adjustment more realistic, the user can set the object to image, graphic, or text to improve the visualization of the effect of changing color settings.

The actual color matching can be further controlled by pressing the Matching tab in the Color Settings dialog box. The Color Matching tab is for the professional who wants to control the details of the printer color matching.
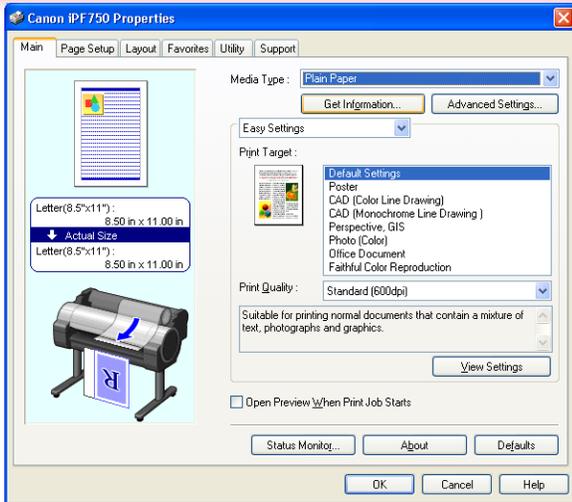
Canon iPF750's Main tab with Easy Settings(Replace Image)

When a certain media type is selected, only the valid print targets are displayed in the list. For example, in the above picture the Draft print target is not selected for a Satin Photographic Paper, because it's considered to be a waste of high quality paper. BERTL really liked this feature to avoid wasting time and paper.
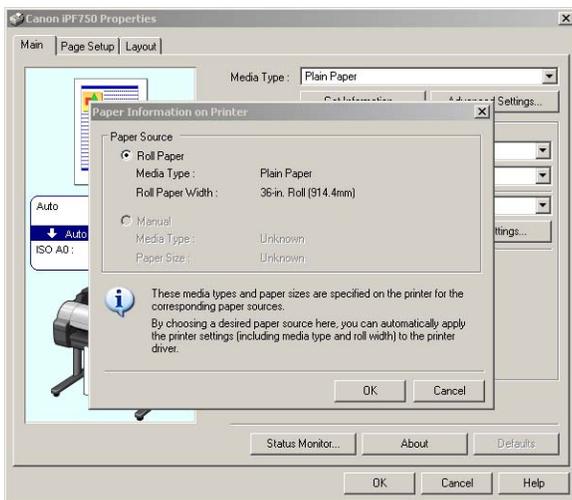
Even with Easy Settings selected, the user will see all the information about the actual settings used.

When using the Easy Settings (recommended for most users), the choices are simplified to the kind of print you are doing (e.g., photo, posters, CAD, scanned images, etc.). The user still has the ability to view the settings to see what comprises a particular print target. This gives users enough information to make an informed decision on which mode to use without printing costly multiple trial prints.

From the main menu you can also launch the Status Monitor (see Status Monitor section of this report).

The Page Setup tab is where page sizes are selected. Most page size standards are represented here. If the default list does not give you the desired print size, the user can select Custom Page Size to create a different size to use.

Borderless printing is one of many great features of the iPF750 printer and can be selected in the Page Setup menu. When Borderless Printing is selected, the printing will print edge-to-edge posters, banners, POP displays, and any other documents that need to have full bleed. The borderless feature reduces offline finishing greatly.

The Page Setup menu also facilitates the portrait or landscape orientation and includes an option to auto rotate the page 90 degrees to conserve paper.

The print driver also offers scaling to match the printer media size (which can be selected through the Media Size drop-down list with the actual roll width) or any arbitrary scaling between 5- to 600-percent, which is suitable for most needs.

Media size options can also be customized through the Size Options button in this menu.
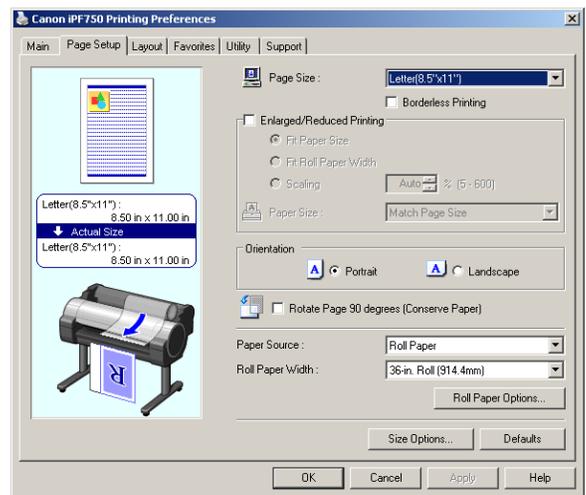

The Page Setup menu gives users ample control for selecting the printing size and other settings.

The Layout tab not only offers the most common layout features such as centering and rotation, it also increases layout capabilities by allowing users to print to Canon's layout software *imagePROGRAF Free Layout.*
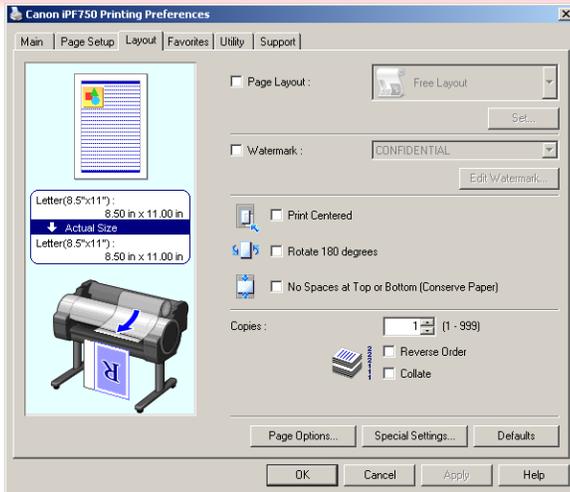
The Layout tab menu

The user can also print multiple copies from 1 to 999 pages and add watermarks to the print. Watermarks can be selected from a predefined list of standard names like Confidential, Preliminary, Draft, Copy, and others, or the user can add their own watermark text to the list and control the position of the watermark on the printed paper. We found this feature greatly added to the versatility of the iPF750 printer.
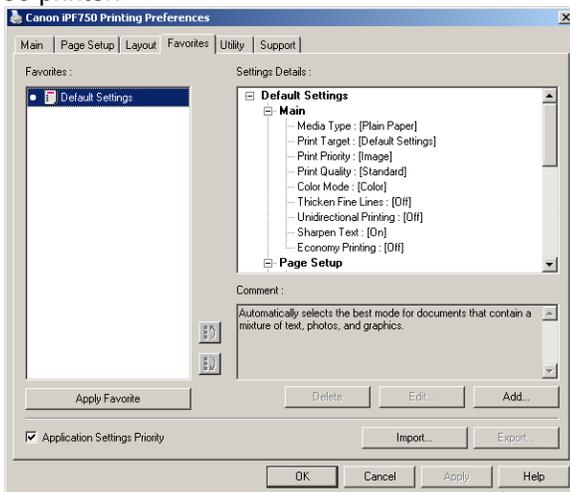
The Favorite tab is a nice addition where the user can save printer settings and recall them later. This feature was called Profiles in previous driver versions. With the ever-increasing list of options and parameters that can be specified to a printer, the need to recall previous settings provides users with great ease. BERTL really likes this feature because it makes life easier for the users.
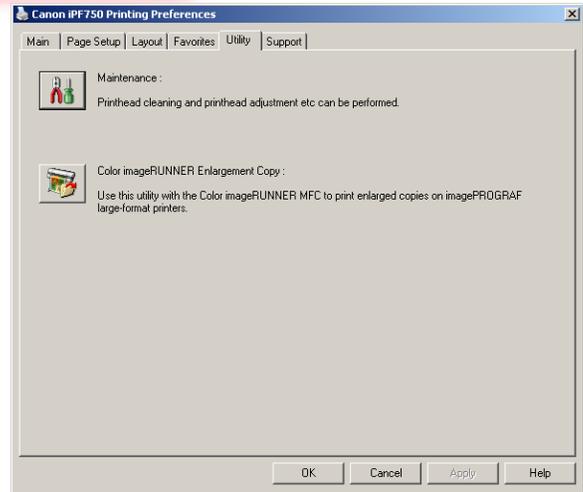

The Utility tab is for maintenance operations and launches the Status Monitor Maintenance tab (see Status Monitor).
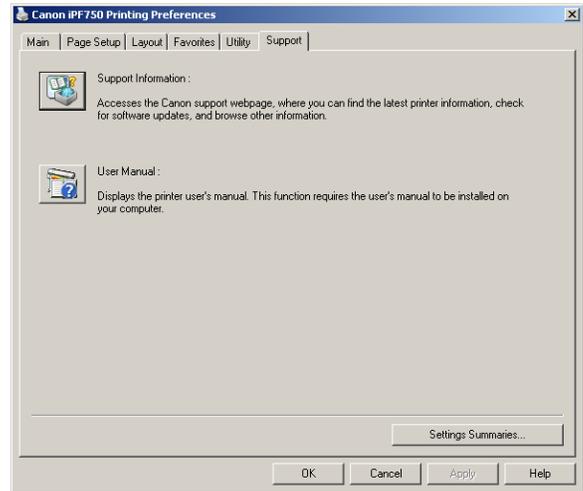
Lastly, the Support tab gives access to support information on the Web or in the iPF750 User Manual.

## Printer Status and Account Manager Functionality

Canon's Status Monitor features a list of features suited to support the needs of most users. It offers users the ability to confirm printer status, manage print jobs, accounting and other support features.
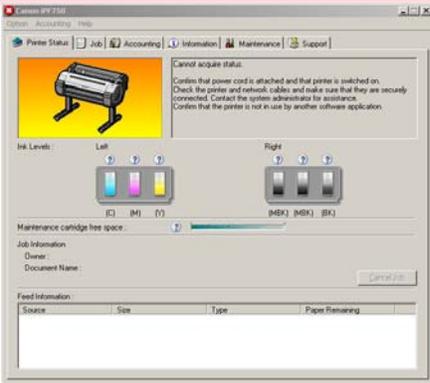
Canon's imagePROGRAF Status Monitor dialogue screen provides users with ink level, job, and feed information.

The Status Monitor keeps track of the documents printed, their status, owner, and size. Users have the ability to pause, resume, and cancel jobs directly from this print queue.
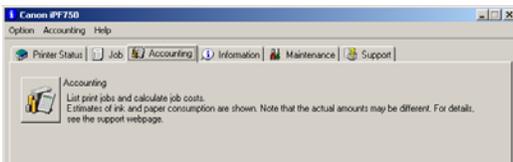
Canon's Accounting Manager is a very powerful solution used to accurately manage print jobs and printing costs. This tool provides users with the ability to better manage multiple projects and client costs.
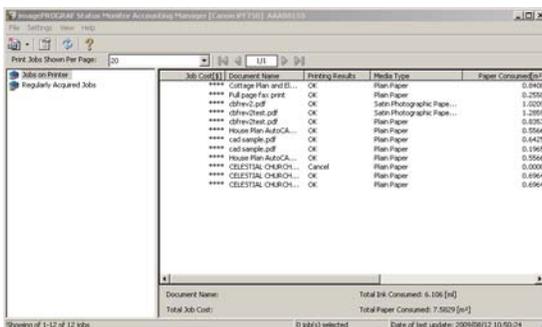
The Accounting Manager window shows a wide variety of

information relating to print jobs. The information tracked gives users the ability to see cost per print job as well as monitor those who have been using the printer. The data logged can also be used to review the paper type usage which helps with inventory control planning.

WHAT WE LIKED

- The printer driver is very well organized, easy to use and operate.

- The flexible and adaptable menu suits both the novice and the advanced user.

- We liked the visualization of how the color settings are impacted.

- We also liked the ease of layout operation and watermark option.

- The ability to save printer settings is incredibly helpful.

- The direct launching of the printer's Status Monitor centralizes and simplifies maintenance.

- The Accounting Manager provides users with the ability to view paper and ink consumption, as well as printing costs by print job or within a specific time period.

- The Accounting Manager also provides users with the ability to configure parameters and enter values used to calculate printing costs such as paper cost, unit ink, and labor costs. Costs can be assigned to ink and paper to determine what Canon refers to as "Costs of Goods". Each individual ink tank can have its own costs associated with it as well as the different types of paper.

- The Account Manager Can store up to 500 records of cost information, while the administrative server can store up to 10,000 job log records in the Status Monitor.

- Cost information logged in the Account Manager can be extracted as an excel file (.csv) which can then be used to create invoices and other inventory control reports.

WHAT WE WOULD LIKE TO SEE

- BERTL was very satisfied with the imagePROGRAF iPF750's print driver, status monitor, and accounting manager capabilities.

Image Quality

BERTL has custom designed a selection of test documents in order to investigate the ability of wide-format devices to reproduce fonts, fine lines, and graphics in both a monochrome and color environment.

BERTL printed the 36" x 48" test pattern (shown on the right) with various lines, text, images gradations, and borders in all the available print modes.
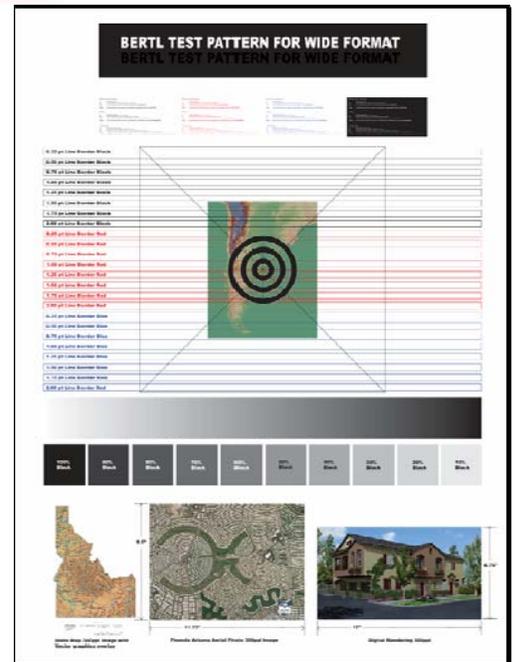
Text iPF750 Readable Font Size - High Quality				
Times New Roman	**Negative**	**Black**	**Blue**	**Red**
Visual	4 pt.	4 pt.	4 pt.	4 pt.
Magnified	3 pt.	3 pt.	3 pt.	3 pt.
Arial	**Negative**	**Black**	**Blue**	**Red**
Visual	4 pt.	4 pt.	4 pt.	4 pt.
Magnified	3 pt.	3 pt.	3 pt.	3 pt.
Courier	**Negative**	**Black**	**Blue**	**Red**
Visual	4 pt.	4 pt.	4 pt.	4 pt.
Magnified	3 pt.	3 pt.	3 pt.	3 pt.
Text iPF750 Readable Font Size - Standard Mode				
Times New Roman	**Negative**	**Black**	**Blue**	**Red**
Visual	4 pt.	4 pt.	4 pt.	4 pt.
Magnified	3 pt	3 pt.	3 pt.	3 pt.
Arial	**Negative**	**Black**	**Blue**	**Red**
Visual	4 pt.	4 pt.	4 pt.	4 pt.
Magnified	3 pt.	3 pt.	3 pt.	3 pt.
Courier	**Negative**	**Black**	**Blue**	**Red**
Visual	4 pt.	4 pt.	4 pt.	4 pt.
Magnified	3 pt.	3 pt.	3 pt.	3 pt.
Text iPF750 Draft				
Times New Roman	**Negative**	**Black**	**Blue**	**Red**
Visual	4 pt.	4 pt.	4 pt.	4 pt.
Magnified	3 pt.	3 pt.	3 pt.	3 pt.
Arial	**Negative**	**Black**	**Blue**	**Red**
Visual	4 pt.	4 pt.	4 pt.	4 pt.
Magnified	3 pt.	3 pt.	3 pt.	3 pt.
Courier	**Negative**	**Black**	**Blue**	**Red**
Visual	4 pt.	4 pt.	4 pt.	4 pt.
Magnified	3 pt.	3 pt.	3 pt.	3 pt.

Lines iPF750 All modes	Black	Blue	Red
Satisfactory 0.25 pt. lines	Yes	Yes	Yes
Grayscale iPF750 All modes	**Draft**	**Normal**	**High**
Smooth grayscale strip	Yes	Yes	Yes
Accurate graduated grayscales	Yes	Yes	Yes

A BERTL test original was printed by the imagePROGRAF iPF750 in all imaging modes (e.g., text, photo, draft, standard and high quality mode).

This is a cropped image of a BERTL test pattern that examines the reproduction capability of fine lines in multiple colors.

The BERTL test pattern shows that the iPF750 has excellent image reproduction capabilities with excellent printing of small fonts regardless of color even in standard and draft mode. We contribute this performance to the 4 pl droplet size for all colors on the iPF750 printer. Also, fine lines are handled with precision and clarity. Lastly, the grayscale gradation pattern was smooth and continuous.

PHOTO IMAGE QUALITY
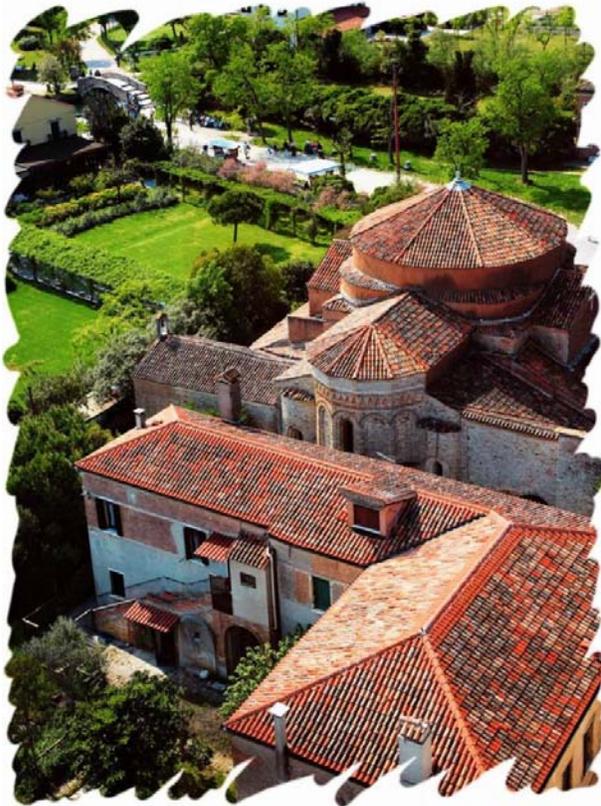
Poster printed in high quality mode.

Poster printed in high quality mode. Please note the banding seen in this picture is not from the original printed poster, but from the scanner. The printed poster was smooth without any banding problems.

Original Test Document

This image shows a cropped version of the BERTL test pattern that examines the reproduction capabilities of text in multiple sizes and colors. The above example shows red Times New Roman type in 3 pt, 4 pt, 6 pt, 8 pt, and 10 pt sizes.

0.50 pt line border in red

BERTL's overall impression was that the iPF750 produces excellent printed color with fine details and no banding. Color matched the original very well both in dark and bright areas, and the colors were rich with very little graininess evident.

WHAT WE LIKED

- We liked the printed quality.
- We liked the smooth color and were surprised with the color fidelity, even in standard mode.
- The new magenta ink has been formulated to give brighter reds and blues for office documents and posters.
- Colors appeared more vivid on uncoated plain bon paper.

WHAT WE WOULD LIKE TO SEE

- BERTL was very satisfied with the yimagePROGRAF iPF750's image quality capabilities.

Media comes in mainly four different types with varying weights: bond paper, vellum, tracing paper, and film. Standard plain 20 lb. bond paper used for general monochrome prints and copies is the most commonly used paper and weight. Vellum was typically used for archival purposes in the past because of its longevity, and it is still used for this purpose today. With more companies scanning hard copies into some form of Electronic Document Management System (EDMS), fewer drawings are being stored in hard copy form due to the large storage requirements. Tracing paper and film are used for specialized application requirements, but are not usually used on a regular basis.

Capacity

Wide-format printer/copiers hold rolls of media. Most rolls hold 500 linear feet, but some rolls can hold up to 650 linear feet of media. The imagePROGRAF iPF750 can handle both roll sizes, as well as two different core sizes (2 inch and 3 inch with optional 3 inch core collar).

The media capacity is directly related to the maximum diameter of the media and roll combined, that the device will accept. Thicker media will allow for fewer linear feet on a roll. A machine may max out its roll capacity with a 650-linear foot roll of plain bond paper, but only allow for a 200-linear feet roll of film or other thicker media. Capacity also depends on the number of rolls that the machine is capable of holding.

Size

When a new size media is loaded from the front, the printer must be set for the correct size and media type. Monochrome wide-format printers generally max out at 36 inches in width and the linear footage of the roll's length, or the print driver's limitations. The imagePROGRAF iPF750 holds rolls up to 36 inches in width. Rolls are generally loaded onto a spindle, and the media is pulled through the printer.

Paper Consumption
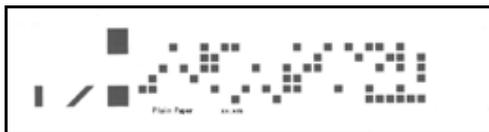
The imagePROGRAF iPF750 features a function called ManageRemainRoll which will print a barcode with text on the roll when the roll is removed that identifies the type of paper and amount left. When ManageRemainRoll is enabled and users load a roll with the printed barcodes, the type of paper and amount left are automatically detected after the roll is loaded. The barcode will be cut off after it has been read.

| Media Handling Input Features Summary	
Standard Media Capacity	Roll feed (one roll), cut sheet (one sheet, front output)

Maximum Media Capacity	Single roll
Cut Sheet Feed Capability	Yes (one sheet, front output)
Media Types	Standard paper, matte paper, matte coated paper, extra matte coated paper, opaque paper, high-resolution graphic paper, high-resolution barrier paper, instant dry paper glossy, instant dry paper satin, photo paper high gloss*
Maximum Media Width	36" (cut sheet or roll feed)
Maximum Media Length	Manual feed: 63" (1.6mm) Roll: 59" (18 mm)
Minimum Media Width	8" (cut sheet) 10" (roll feed)
Maximum Media Weight	Info not available
Standard Media Core Size	2" or 3" inch core

*Photo paper satin, photo paper semi-matte, heavy weight satin paper, commercial proofing paper, etc.

Loading and Unloading Media Rolls

Loading rolls of media is quite easy and can be accomplished by novice users. One of the benefits of the iPF750 printer is that load/unloading is done from the front of the printer.

To replace or change media, users simply lift out the roll and loosen and remove the plastic collars from each end. New media is loaded onto the same spindle; the user replaces the plastic collars against the end of the roll and tightens the clamps to secure them to the spindle.
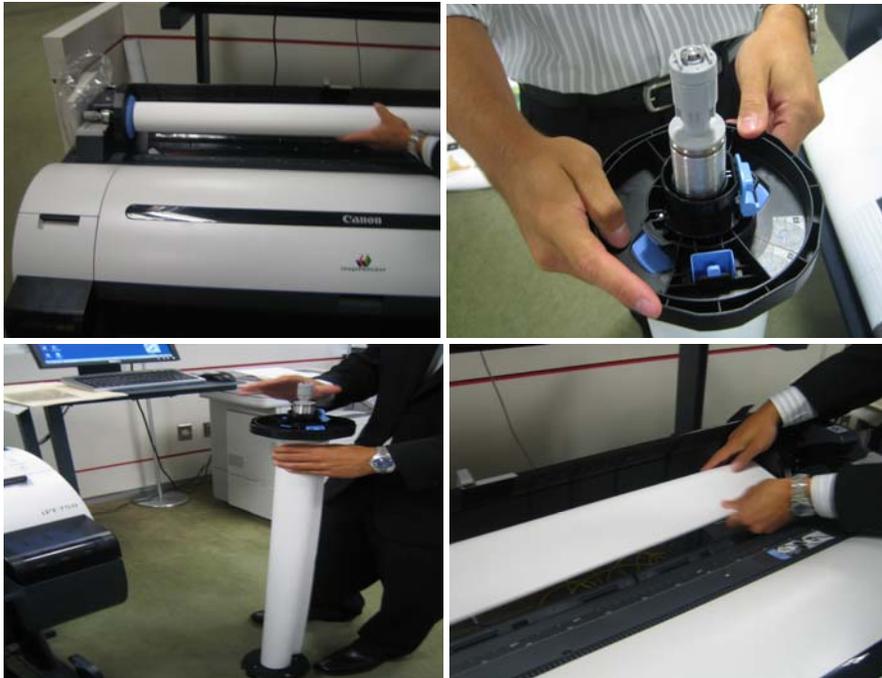
Above Clockwise: *In order to change the paper roll, the user lifts out the paper roll from behind the print housing, then removes the roll holders from one end of the roller, slides out the old media roll, slides on the new media roll, then replaces the roll holder and tightens the clamp, replaces the paper roll and closes the roll cover.*
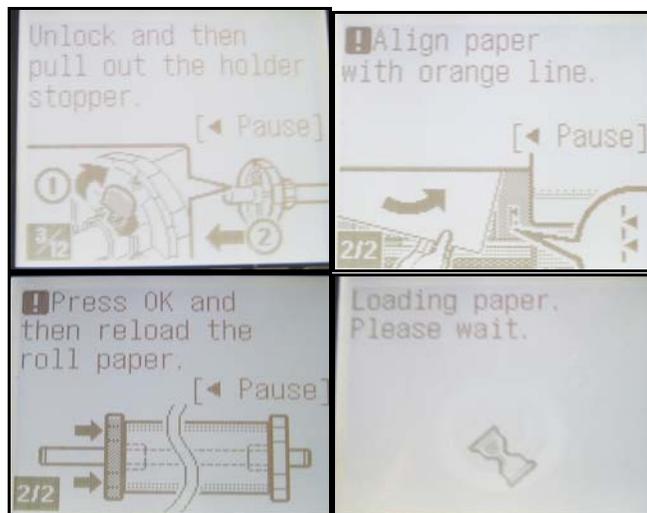
On screen prompts guide the user throught the roll change process.

After installing new media, the LCD panel on the iPF750 prompts the user to specify the newly installed paper type. You should note that the iPF750 printer automatically detects media width.

WHAT WE LIKED

- Completely redesigned control panel features a new and more intuitive user interface.
- Dedicated buttons for paper cutting and feeding, Administrator Mode, Media Type Presets and Estimated Time Remaining Display provide users with great ease of use.
- When a media roll is placed in the track, the track guides the paper into the proper position for loading. This makes it simple to load paper as you do not have to move the printer to load paper
- Unloading and loading of media rolls is easy and guided by the operator control panel.
- The wide format printer accepts a wide range of paper types, from standard paper to various photo paper types, instant-dry paper, commercial proofing paper, water resistant art canvas, adhesive matte, stretch vinyl, and more.
- The *ManageRemainRoll* feature provides users with an excellent method for managing paper consumption and paper inventory.

WHAT WE WOULD LIKE TO SEE

- BERTL was very satisfied with the imagePROGRAF iPF750's media input handling capabilities.

The iPF750 can be configured so that printed output automatically rolls around this bottom spindle. An optional basket can also be installed for catching prints. To remove the printed output, the user removes the spindle and one collar, and then slides it off the roll.
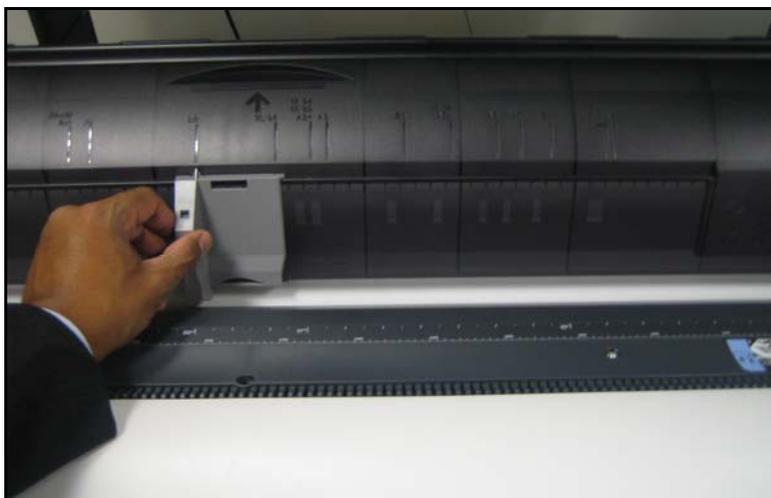
Easy cut sheet loading with built-in media guide

Media Handling: Output/Finishing Features Summary	
Maximum Output Capacity	Automatic winding media take-up reel
Standard Output Capacity	Info not available
Width Detection	Yes
Output Face Down	No
Output Face Up	Yes
Folding Options	No

WHAT WE LIKED

- The printed output automatically rolls around the output spindle and forms a roll; as a roll, the image is protected from damage and can be easily transported and stored.
- We liked the optional basket for catching prints.
- The stackable basket features a new design that allows for neatly stacked output. Users can stack up to 20 sheets and features adjustable paper stoppers for different sized output.
- New Dual blade media cutter has been designed to improve durability. Independent motor allows for faster cutter movement.

WHAT WE WOULD LIKE TO SEE

- BERTL was very satisfied with the imagePROGRAF iPF750's media output handling capabilities.
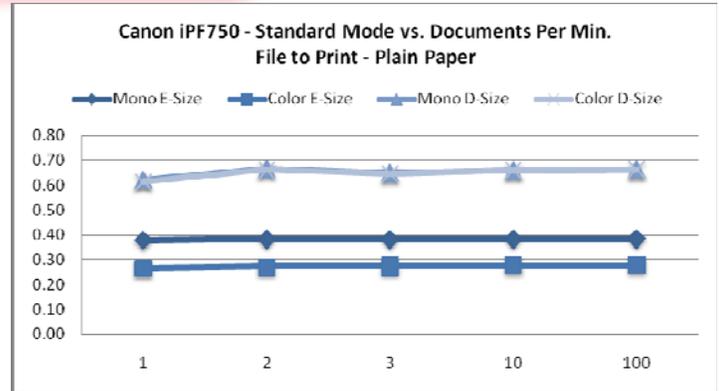
FILE-TO-PRINT PERFORMANCE STANDARD MODE

In our file-to-print test, we take 'D' and 'E' size files and print 1, 2, 3, and so on through the number of copies and measure the real throughput. Due to the initial delay of transferring the file to the Canon iPF7500, the print job is spooled from the PC and sent to the printer. The printer first starts printing after 20.74 - 21.2 seconds. The first color print is finished after 97 seconds ('D'size) and 226.3 seconds ('E'-size) in Standard mode with plain paper.

The same test target was printed in black and white mode so we could measure the printer's productivity in black and white mode. The printer first starts printing in mono after 21.58 – 22.58 seconds. The first mono print finishing after 96.4 seconds ('D' size) and 158.6 seconds ('E'-size) in Standard mode with plain paper.

Subsequent copies are printed at the rated speed of the printer. As we increased the number of copies, we should see that the initial staging and first document print time will move closer to the theoretical speed of the printer. For the test print file, we use a mixed color graphic and line drawing test chart, and we expected to see less than claimed speed to be realized. As we increased the quality mode from Standard to High, we saw an increase in processing time and, of course, printing time.
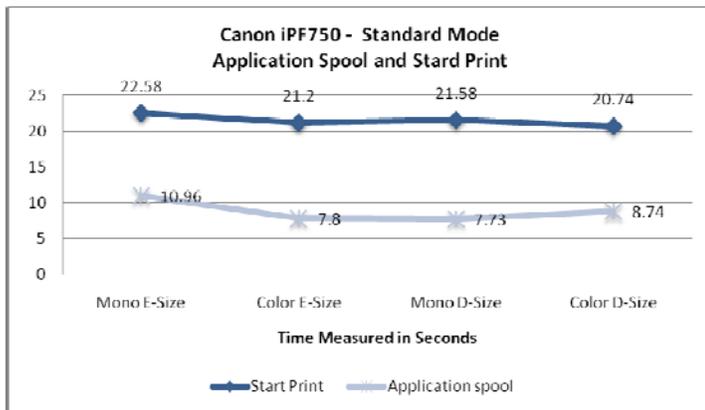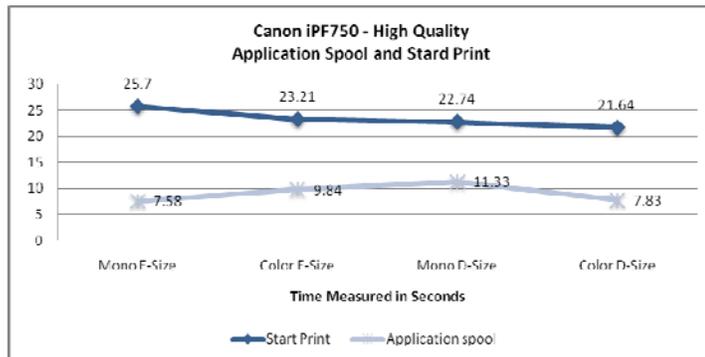

Application Spool Time and Time to Print was measured using both Color and Mono modes. The files were printed on E and D paper sizes using Standard Mode on Plain Paper.

The number of documents printed per minute using Standard quality and plain paper.
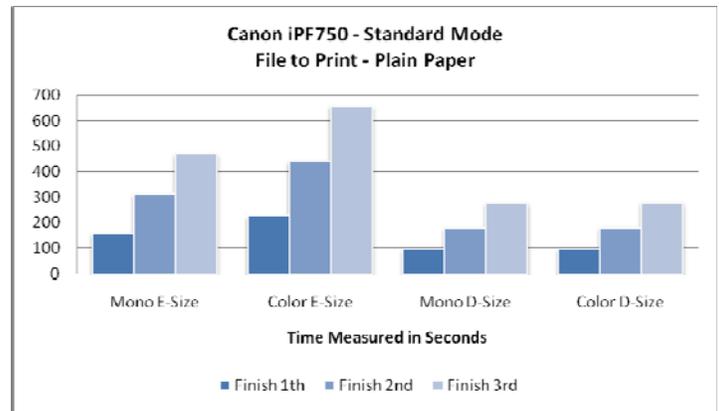
Side by side view of the mono and color files printed by paper size using Standard quality and plain paper.

We noticed that there was a significant difference in print speeds depending on whether the printer was set in Standard or High mode. It was rather difficult to see any visual differences in the quality of output between the Standard and High mode. So, production in Standard mode would be more than sufficient and would increase production speed. Even the Draft mode can be used to increase production speed significantly while only reducing image quality slightly.

FILE-TO-PRINT PERFORMANCE HIGH QUALITY MODE

When printing in High Quality mode, the printer first starts printing after 21.64 – 23.21 seconds. The first color print is finished after 200 seconds ('D' size) and 320 seconds ('E'-size) in High Quality mode with Satin Photographic paper.

The same test target was printed in black and white mode so we could measure the printer's productivity in black and white mode. The printer first starts printing in mono after 22.74 – 25.7 seconds. The first mono print finishing after

257.3 seconds ('D' size) and 320 seconds ('E'-size) in Standard mode with plain paper.

Application Spool Time and Time to Print was measured using both Color and Mono modes. The files were printed on 'E' and 'D' paper sizes using High Quality on Satin Photographic Paper.

As a general impression, we observed that with 'D' sizes, speed performance dropped by a factor of 2.3 when we went from Standard to High mode and increased by a factor of 1.7 from Standard to Draft mode.

We observed a drop in performance on the 'E'-size by a factor of 2.8 when going from Standard to High, and an increase by a factor of 1.8 when going from Standard to Draft.

We also timed the performance for matte coated paper 90 gsm, and as expected we saw a decrease in performance. However most of the performance decrease comes from the driver allowing the user to print in Draft mode at 300 dpi print resolution on plain paper instead of 600 dpi print resolution when printing on matte coated paper. Canon limits the availability of faster print speeds depending on the media type and if you are printing images or line drawings. Also worth noting is that it only took about 20 seconds extra time to switch from the plain paper roll to the matte coated roll in the performance testing.

With matte coated paper the speed dropped by a factor of 1.9 from Standard to High and by a factor of 1.5 from High to Highest quality mode with an 'E'-size drawing. Using Standard or High quality mode when printing is recommended since the increased speed outweighs the slight quality changes from standard to high to highest.
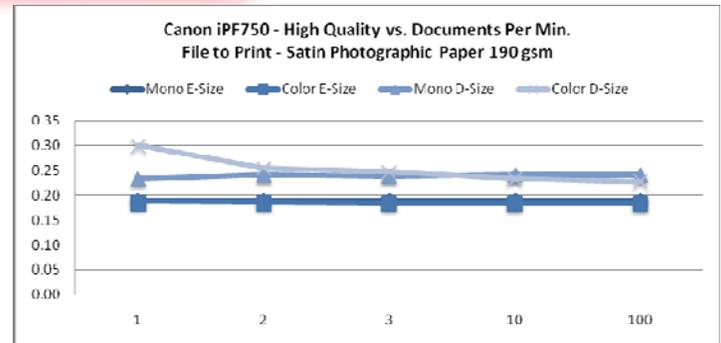
The number of documents printed per minute using High Quality and Satin Photographic paper.
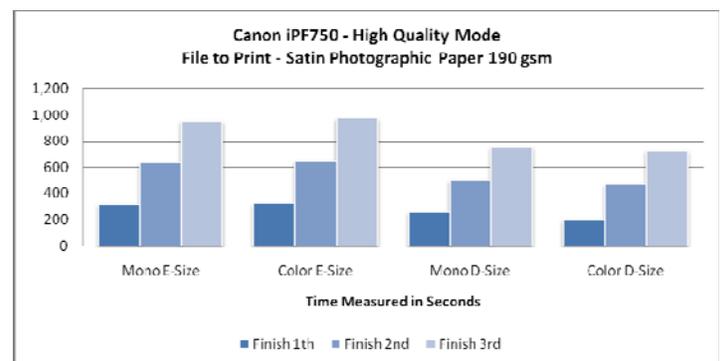
Side by side view of the mono and color files printed by paper size using High Quality and Satin Photographic paper.

WHAT WE LIKED

- We liked the increased speed of the 5-color iPF750 over the iPF710/720 printers.
- Fast switching time when changing from one roll to another.

WHAT WE WOULD LIKE TO SEE

- BERTL was very satisfied with the imagePROGRAF iPF750's print performance in both color and monochrome.

Routine maintenance covers ink tank replacement and maintenance cartridge replacement. For the iPF750 5-color printer, these tasks are done through the ink housing on the printer's left and right sides. The iPF750 can handle ink tank replacement on the fly while printing, which is a great feature for production environments.

The imagePROGRAF iPF750 utilizes 5 color inks. The three colored (C, M ,and Y) ink tanks are housed on the top left side of the printer, and three black (B and MBKx2) ink tanks are located on the top right side.
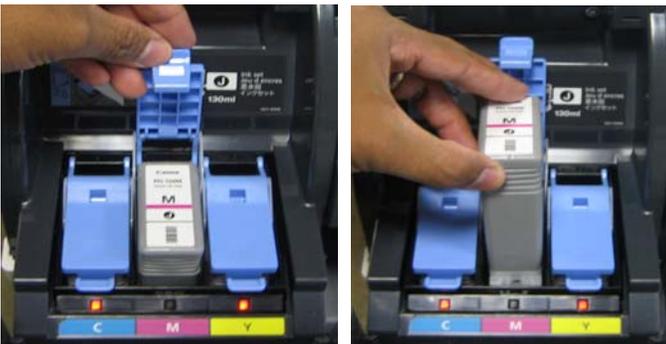
Removing the ink tank is easy. After lifting up the cover, the user pulls up on the tank cover (left), then grasps the tank and carefully pulls up and out (right).

The user must periodically empty a waste maintenance container. Ink waste arises mostly from borderless printing and ink head cleaning. Previous Canon printer models required frequent replacement. But, newer printer firmware that better controls ink output greatly reduced the replacement cycle for the maintenance cartridge. Ink head replacement follows a similar guided process through the operator panel and is easy to follow.

Maintenance Features Summary	
Ink	6 user-replaceable ink tanks.
Calibration	Automatic
User Ink head replacement	Yes
User Ink tank replacement	Yes
Load ink while printing	Yes
User Replaceable Waste Toner Receptacle	Yes

WHAT WE LIKED

- Users can replace ink tanks even while the device is printing, ensuring uninterruptable printing.
- The replacement procedure is easy to follow with both placard and operator panel guides.

WHAT WE WOULD LIKE TO SEE

- BERTL found that the imagePROGRAF iPF750 was very easy to use and maintain on a daily basis.

An efficient device management backbone is needed to take full advantage of the feature set within a printing device. Device management is commonly supported through a Web server on the device controller that can be accessed using any desktop Internet browser. The user simply enters the IP address of the device into the URL address line. Users can also access device management at the print/copy/scan controller if the controller has a keyboard, monitor, and mouse. An administrator and a user have different management and monitoring needs.

USERS

End users want to know if a device is capable of handling a job. Supply levels and a list of jobs already committed to print are important. For some devices with document storage and communication capabilities, end users also need desktop management of print on demand, stored document viewing (to check print on demand files or scanned files), and, for the more advanced, the creation of scan-to-email and scan-to file destination templates.

ADMINISTRATORS

An office or network manager looks for greater control over the device functionality and setup without leaving their desk. They may be looking to manage network setup, establish security, apply cost control measures, and check supply levels. A setup for automated email can alert different staff members when problems occur.

Due to the nature of the Web server, this capability is usually limited to an individual device. Many manufacturers also include a network device management fleet tool, which allows for the monitoring and management of multiple devices around the network concurrently. Many also provide plug-ins to the most popular IT device management utilities to ensure the maximum amount of information can be relayed from their device to the third-party application.

Print Status Monitoring

Printer status monitoring is available from multiple locations such as the Status Monitor, a separate software package that's included with the imagePROGRAF iPF750, and the Remote Users Interface (RUI), which is a Web interface. The printer operation panel display is located on the printer itself.

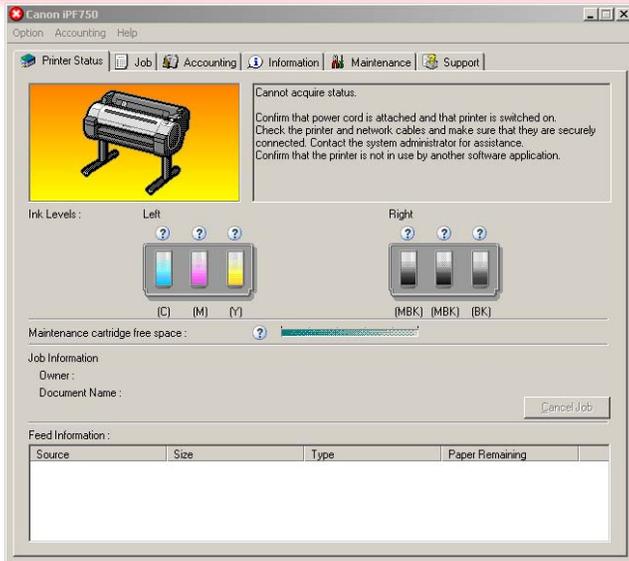The Status Monitor's Printer Status tab and the RUI's Status dialog box display similar information, such as printer status, ink level indication, media status for manual feed tray and media rolls, and error information.

One of the main differences between the Status Monitor and the RUI is that the Status Monitor is a software package that has to be loaded on every computer that is allowed functionality while the RUI doesn't require any software to be loaded and can be accessed by entering the IP address of the printer in a Web browser on any computer on the same network.

Some other differences are that the GUI doesn't give real-time information and it must be refreshed to get the current printer status. It only displays error messages and doesn't give the user a solution to remedy an error like the Status Monitor does.

The Status Monitor is where users, key operators, and network administrators can get real-time information quickly and easily to manage all their Canon iPF series printers.

Device Management Features Summary	
Web-Based Device Management	Yes
Executable-Based Device Management	Yes
Group Management Capability	Yes
Manage Third-Party Devices	No

Users, key operators, and network administrators can use the Status Monitor to check printer status.
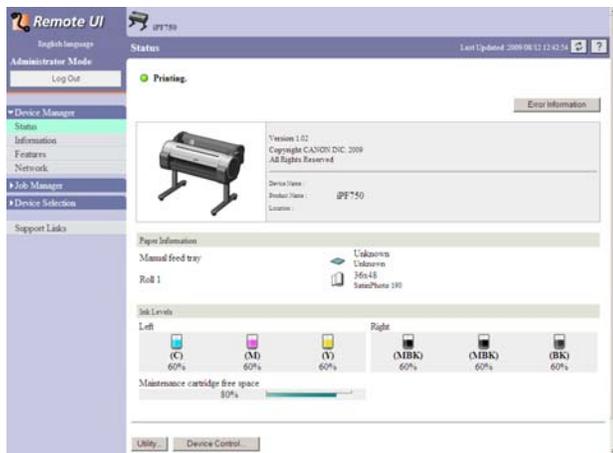
Users, key operators, and network administrators can check printer status through the Remote User Interface by typing in the IP address of the printer.

The RUI offers both an Administrator view and a User view. The former has more status to show and control, and it requires a password to enter.

The Status Monitor application supports
- Real-time printer status
- Job control
- Hard disk administration
- Printer Information menu
- Maintenance
- Support

The Printer Status by far is the most important one. In general, it's divided into four sections.

- Printer Status displays the status in real-time as well as any error message information and possible remedies, such as replace cyan ink tank, etc.

- The Ink Levels feature shows the approximate ink level in each ink tank divided between the left and right ink tanks.

- An indicator shows the free space in the maintenance cartridge.

- Lastly, Printer Status shows information pertaining to job submission as well as a media status check and roller/paper information.
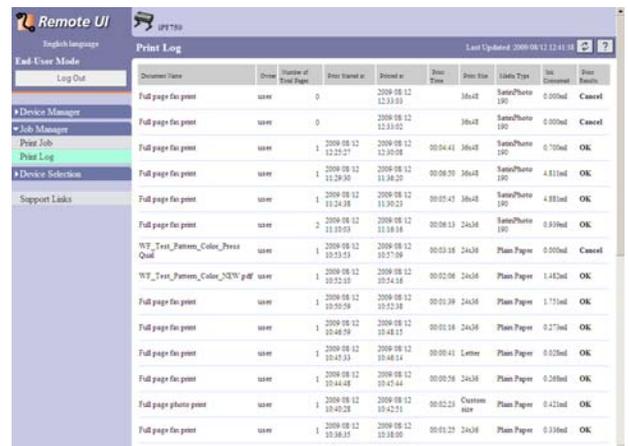

The Job Manager tab, displays all current jobs queued for printing, as well as previously printed jobs.

The iPF750 features enhanced job log information which is accessible from the Status Monitor or Remote UI interface. Information collected includes:
- Log Recording Time
- Job Name
- Job Owner
- Client Job ID
- Client Job Submission Time
- Job Completion Time
- Job Completion State
- Ink consumption per job
- Media Type
- Number of completed pages
- Media consumption area per job
- Extended Media Type
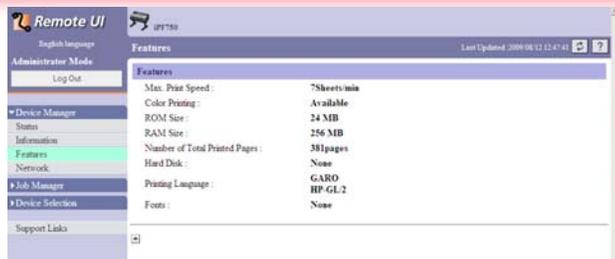
The Remote UI features tab, allows users to access features such as the total number of pages printed, speed, memory and hard disk information.
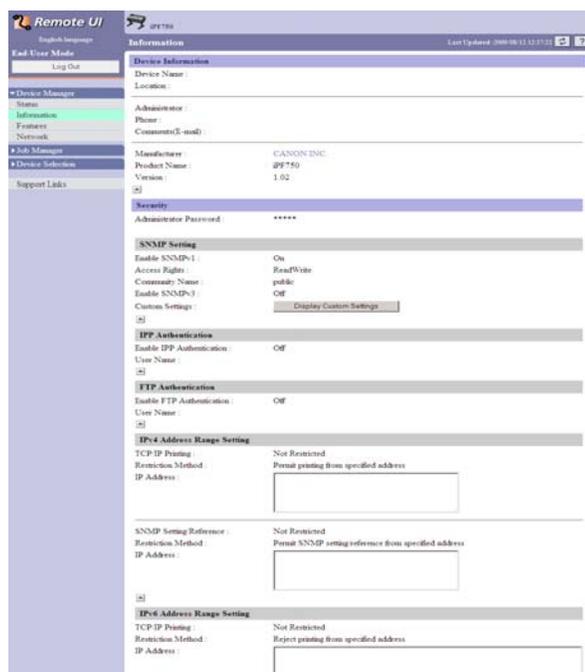
Remote UI Information tab

This includes Printer Status checks that print out or display a complete list of all printer settings or save it to a file.

- Display status of the printer settings
- Display print job logs
- Print job logs
- Print media detailed settings
- Print menu map
- Status saving to a file.

The Status Monitor's Maintenance tab enables the operator to perform periodic maintenance from the convenience of their computer. With this tab, the operator can perform a nozzle check, adjust the print head, clean print head, and adjust media feeding.

To allow the administrator to monitor multiple iPF series printers simultaneously, the administrator can set up automatic notification that will be triggered in case of an

error or important status messages like of out of ink, etc. When an event triggers a notification, the administrator will automatically receive an email informing him of the event.

WHAT WE LIKED

- The Status Monitor can be accessed quickly via the Windows Start menu or the print driver and displays real-time information.
- With the Printer Status menu, the user can immediately get all the important information about the printer's status
- Operators can perform routine maintenance such as print-head cleaning and printer calibration from their computer.
- The automatic notification of printer events allows the operator to take immediate action.
- We like the event-based notification based on reaching conditions such as out of paper.

WHAT WE WOULD LIKE TO SEE

- BERTL found the device management and monitoring tools on the imagePROGRAF iPF750 exceptionally easy to use.

High-tech security is never out of the news, with reports of information theft and hacking making headlines. By the very nature of their development, network printers and MFPs are security risks if not managed correctly. This also holds true for wide-format printers, if not more so, because of the building plans, maps, and electrical drawings running through these machines. Security may be even more important in these cases.

Advanced network connectivity options open ports to hackers. Industry-standard Java and Web browser design elements are vulnerable to virus attack. Large hard drives store a latent copy of every document flowing through the device for years. Devices link directly to core network components such as the LDAP address list or the central file server. Plus, fast communication options let insiders send information to the outside with no method of being traced.

Security and data compliance buzzwords and regulations such as Common Criteria certification, HIPAA, Sarbanes-Oxley, Gram Leach Bliley, FERPA, SEC, FSMA, and the Patriot Act look to safeguard information and force companies to conform to best practices in document and data security management.

Safeguarding Data

Most printers now offer a standard or optional hard drive. Although document security is not as common as with cut-sheet MFPs, there are manufacturers that are considering the need. And, some have implemented document security in their machines already. Any company dealing in critical, sensitive information should determine if they need data-overwrite capability that has passed Common Criteria (CC) certification.

Data overwrite deletes information on the hard drive by writing a series of random ones and zeros over the sectors storing data, usually multiple times. The CC test relates to how data is deleted from a device's hard drive after being used. CC certification is carried out by a government-approved test facility. Many manufacturers get CC certification to satisfy government security requirements, and it is a requisite for many government agencies and contractors. Most devices pass evaluation assurance level (EAL) 2, with some aiming higher at EAL 3. The higher the level, the more extensive the testing, and the more secure the hard drive is deemed.

Controlling Access

One of the keys to security is limiting the initial access to the device both remotely and at the device itself. TCP/IP and MAC filtering allow the administrator to limit remote access to the device. MAC filtering is more secure; the

TCP/IP address can be copied, but the MAC address is a fixed specification that cannot be changed. IPv6 is now becoming commonplace on network devices. IPv6 also makes it harder to crack or hack into a PC address range by making the address more complex.

Network authentication is now available on nearly every MFP and printer, forcing users to enter a user name and password before access to the device is granted. Most devices can verify a user by linking to Windows Exchange user lists, Novell network user lists, and LDAP server lists.

There should also be password encryption at the point of the login process through SSL or other encryption or security technology (such as Kerberos) preventing hackers from watching and capturing user names and IDs as they travel through the network. There should also be password encryption at the point of the login process through SSL or other encryption, or other security technology (such as Kerberos) preventing hackers from watching and capturing user names and IDs as they travel through the network.

Security Features Summary	
Hard Drive Overwrite	No
Removable Hard Drive	No
Private Print	No
Encrypted Print	No
Encrypted PDF Send	Not Applicable
Network Authentication	Not Applicable
LDAP Authentication	Not Applicable
Kerberos Authentication	Info not available
SNMP v3.0	Info not available
IPv6	Yes
SSL	Info not available
IP Filtering	Info not available
MAC Filtering	Info not available

WHAT WE WOULD LIKE TO SEE

- We would like to see more security features. The imagePROGRAF iPF750 does not come with a hard drive and hence does not have many security features. However, the iPF755, which comes with a hard drive, conforms to the Dod5220.00-M standard for the U.S. Department of Defense.

Accessibility

In the United States, Section 508 legislation prohibits government agencies from purchasing devices that are not accessible to those with physical impairments. For this reason—and the corporate world's increased focus on delivering a better work environment for all—user-friendly features for physically-impaired users are more common.

Common design features include tilting control panels, which give wheelchair-bound users a better view of the screen, and larger display options for those with impaired vision.

Voice navigation and Braille also are becoming increasingly popular. Easy access to the paper path for jam removal or front access to toner supplies can make a device more user-friendly to all.

User Accessibility to Device Controls

The imagePROGRAF iPF750 printer operation panel is navigated with hard-key buttons that will also improve navigation for the visually impaired.

User Accessibility for Media Refilling

The imagePROGRAF iPF750 paper rolls can easily be replaced from a seated position. The media rolls are accessed at the front of the machine.

User Accessibility for Media Jam Removal

Wheelchair users should be able to view messages on the operation panel screen indicating that there is a paper jam. With the device's short paper path, wheelchair users should be able to handle any jam that occurs with the same ease as a standing user.

User Accessibility for Routine Maintenance

The ink containers are housed on the top corners of the wide-format printer, and it is fairly easy to access them, although they may be out of reach for a wheelchair user.

WHAT WE LIKED

- Wheelchair users are be able to access the control panel and any paper jams, although it may be more difficult for them to load the paper rollers onto the device.
- Wheelchair users are also able to easily load the ink on the device without any assistance.

WHAT WE WOULD LIKE TO SEE

- BERTL found accessibility features on the imagePROGRAF iPF750 suitable for today's work environments.

ImageFLOW

The ImageFLOW software is a new all-in-one package that enables user to scan, preview, print, and copy images. It's included with the Supra solutions at no additional charge. This software enhances the experience for the operator. All buttons are logically placed, with the view/preview on the left and controls on the right. In the lower right corner you can find the three main functions:

- Scanning
- Printing
- Copying

ImageFLOW supports and comes with a touch screen as well as the typical keyboard and mouse interface, making input easy.

ImageFLOW has a user-friendly interface that is appropriate for the novice, intermediate, and experienced operator.

ImageFLOW is not just another scan, print, and copy application. Its base technology comes from the reprographics world and is based on PhotoPrint 5 from SA International. ImageFLOW supports more than 550 printers, making it easy to fit into your workflow. In addition, print jobs from other users and software can be integrated into ImageFLOW and are organized into a print RIP and queue system so you can create sets and manipulate the queue, providing you with a comprehensive company-wide queue and print system.

Printing with ImageFLOW
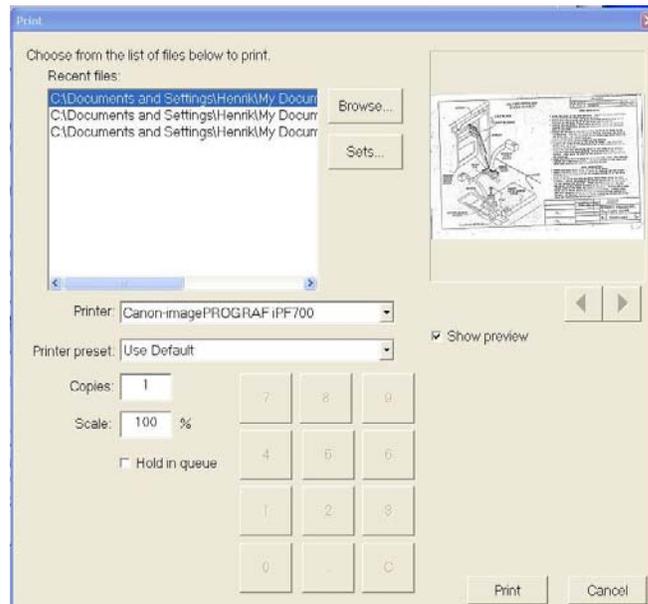
The Print dialog box is easy to use and supports the touch screen interface

To print files previously scanned or already in the system, users can just click the Print button. In the Print dialog box you can add files using the standard browser and select the printing device with a preset printer paper profile, set the scaling, and select the number of copies to make. You can also hold print jobs in the queue for later release and build complex sets of prints. Just select the Sets button to create, rearrange, and manage sets.
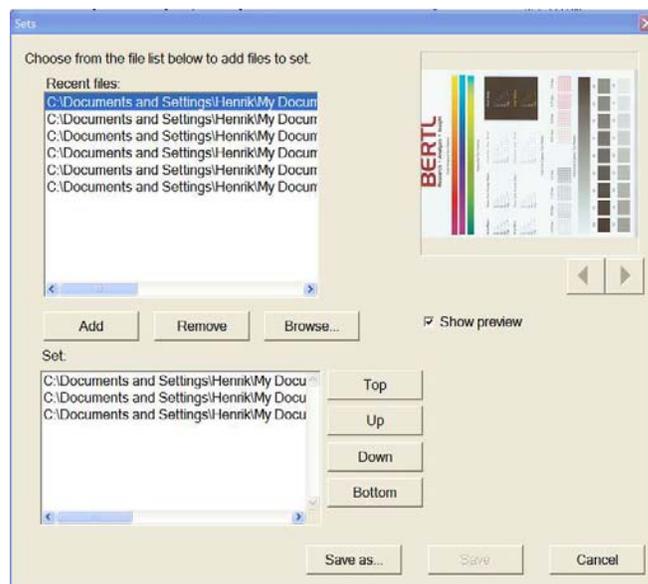
Creating a print set is easy with the ImageFLOW interface.

Copying with ImageFLOW

To copy, simply select the number of copies needed, set the scale, and press the Copy button. This is simple and efficient. You can also select Batch Mode so that the scanner continuously scans, prints, and ejects the drawings without interruption.
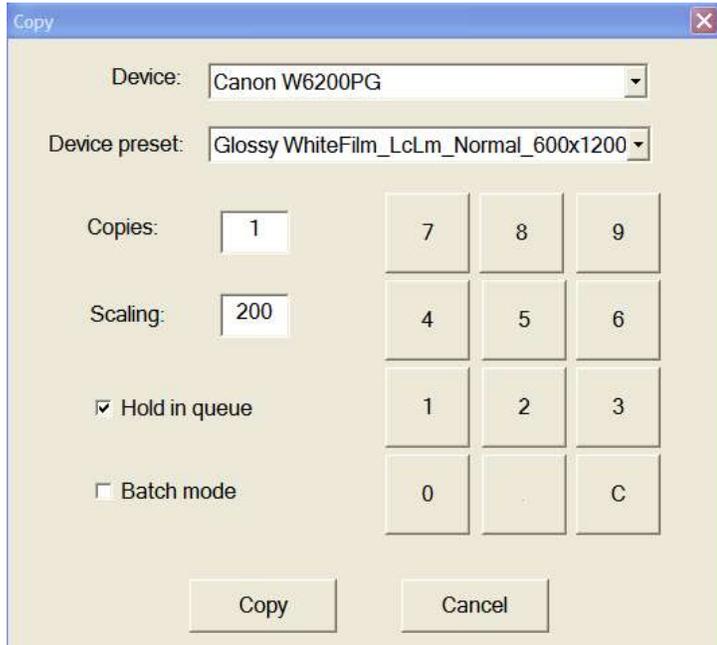
The Copy button supports the walk-up copy function.

Scanning with ImageFLOW

Scanning is simple:
- Select the scanning mode (Color, Grayscale, or Black and White) by clicking on the appropriate tabs at the top.
- Select one of the eight presets or click the Edit button to customize scan settings.
- Click the Size button for selecting scanning sizes.
- Click the Scan button, and select file format and destination file.

Scan Modes

Use the preprogrammed scan modes or make your own.

To begin, choose from one of the eight preset modes or select the Edit button to change the scan settings. For all scanning modes, you can choose normal, high-quality, or high-speed scanning quality, and then adjust the scanning resolution. Furthermore, you can set the black and white point or let the software do this automatically. Finally, set contrast and brightness.

There are also a few individual parameters to set, such as edge sharpening for grayscale, auto-despeckle for black and white, and 24-bit or 8-bit color.
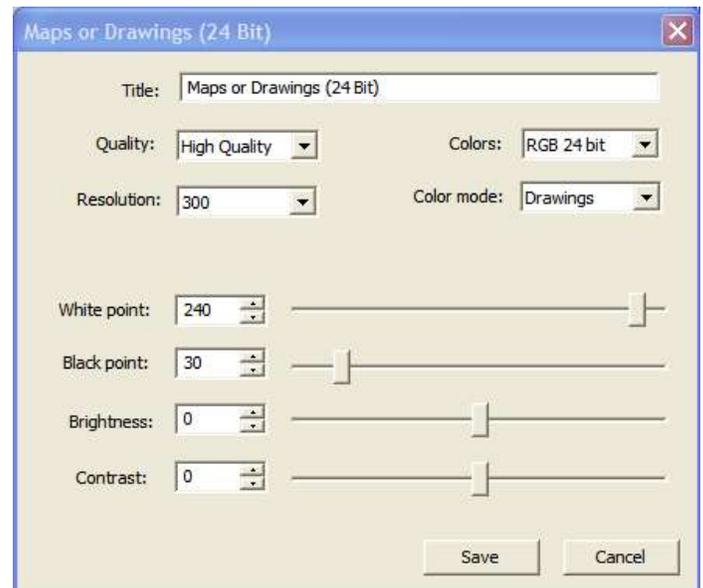
In color scanning mode, the black and white points, brightness, and contrast can be changed.

You can set the default resolution and scan quality. You also can overwrite it in the main screen, but the predefined settings are very helpful for the novice operator to get the job done fast. We found the Gamma adjustment was

missing, which is found on all higher-level professional MFP systems. Paradigm explained Gamma was left out because ImageFLOW is for users with mid to low levels of experience and the EIS Supra really is targeted as a walk-up copier solution. By adding a Gamma adjustment and other high-end features, the user interface gets complicated, making it harder to operate and learn. The company didn't feel the trade-off met its goal to make the interface intuitive and easy to use.

There are eight possible default settings for each scanning mode that the operator can customize to meet their needs.

Scanning in black and white for the CAD/GIS market is also supported. Both the simple scanning threshold and the more advanced Adaptive sensitivity threshold are supported, making the Supra solution well-adapted to scan clean, as well as deteriorated engineering or GIS maps.
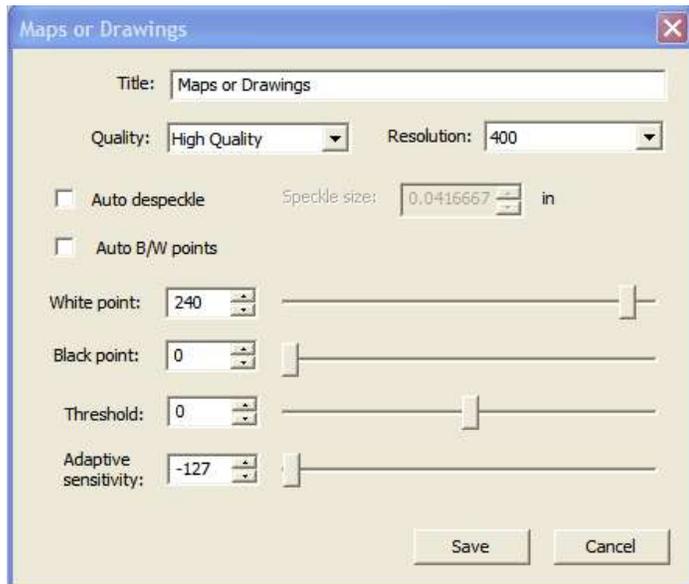
Black and white scanning has Adaptive thresholding for cleaning up faded or deteriorated drawings. This feature is often missing on black and white MFP systems.

Document Size

Next set your scan size. In the Document Size dialog box, choose ISO, ANSI, or ARCH preset sizes or set your own custom sizes. ImageFLOW tracks recent sizes that you've used for future scans.

In the Document Size dialog box, you can also let ImageFLOW manage your scan size information. This feature is very handy when scanning in batch mode where drawings' paper sizes can vary with each scan. Simply select Auto Width, and the program takes over. You can also select Auto Deskew so the program automatically

deskews tilted images, helping make the scanning process more efficient.
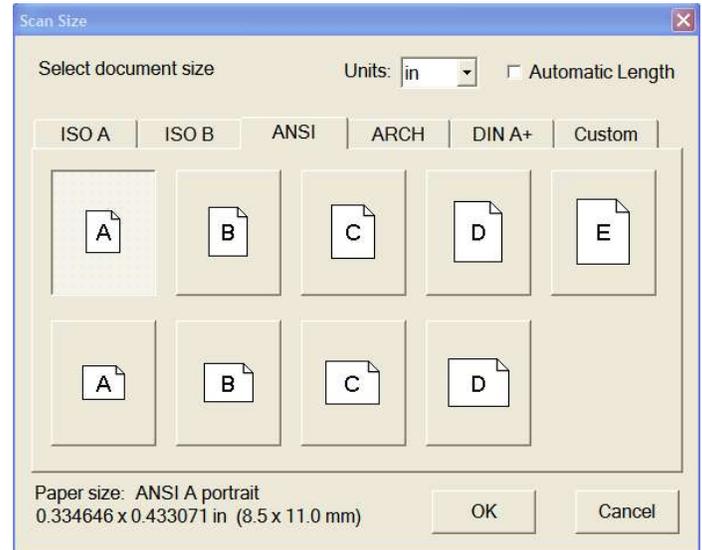
Choose between standard document sizes in both landscape and portrait mode.
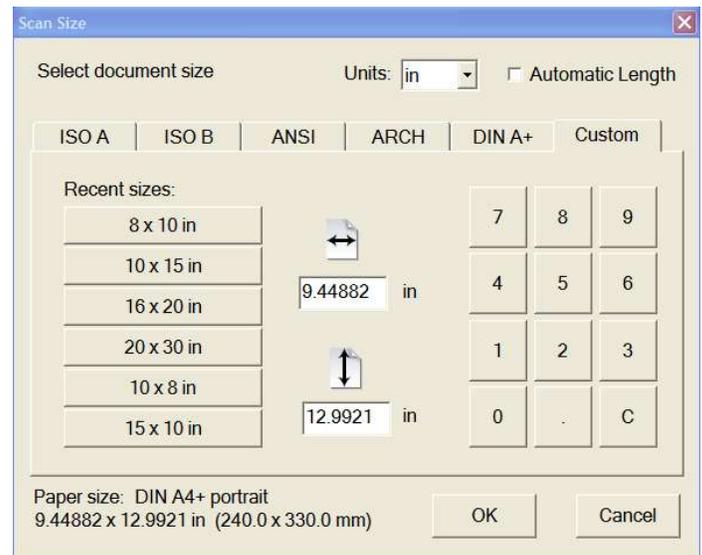
Any document size can be selected in custom mode. ImageFLOW keeps track of the most recent custom sizes.

Start Scanning

Once you specify a filename, you are ready to scan. ImageFLOW supports single and multiple-page TIFF, PDF, and PostScript formats so you can scan drawings into the same file. This is a very welcome and convenient feature that other copy system software programs don't offer.

Previewing with ImageFLOW

Not all drawings are created equal, and sometimes you need to change the scanning process in order to end up with an acceptable scan. You can use the scanner preview function prior to performing the actual scan in order to make adjustments.

ImageFLOW also supports previewing and cropping.

Previewing and cropping is easy with ImageFLOW.

What We Liked

- BERTL liked the easy-to-use and well-designed ImageFLOW interface that enables the novice user to use it as a walk-up copier.
- We also liked that ImageFLOW enables operators to customize the color mode default settings.

What We Would Like To See

- After previewing, we would prefer not to have to reload the paper in the scanner to make the final scan. Currently the scanner can't rewind the document, instead, it has to be re-loaded.
- More features like Gamma for photocopying would be helpful, but not at the expense of the easy-to-use interface.
- When the unit of measuring is in inches, ISO and DIN document size standards should disappear (and vice versa for millimeters with the ANSI and ARCH standards) to reduce overall screen clutter.
- We would like a better and more precise way to crop images using the touch screen.
- An improved scanner reaction time from touching the scan button to seeing the image on the screen would also be helpful.

Consumables

BERTL found the Graphtec scanner easy to repair, with plenty of room for replacement of circuit boards.

Like any other peripheral, both the scanner and the Canon iPF750 printer have consumable parts. For the Canon iPF750, it's the paper, ink, and overflow reservoir. All consumables are easy to replace, and the Canon iPF750 display panel guides the operator through the consumable-replacement process. Furthermore, the printer warns the operator about low ink levels, ink-tank replacement, and if there is not enough media to complete a job.

Maintenance

Besides changing media rolls and calibrating the printer and scanner, the most common maintenance is replacing the Canon iPF750 printer's print head, inks, and ink tank reservoir. All three tasks are easy to perform.

If a print job has been sent to the printer and the printer does not have enough ink to complete the job, the print job will be held until the problem is resolved. In addition to the warning on the printer display, the person sending the document for printing will be notified of the problem by the GARO Status Monitor software.

The display menu identifies the ink that needs to be replaced.

Ink tanks are very easy to replace. The control panel provides a short series of onscreen illustrations and directions that guide users through the ink-replacement process, making it an easy task even for novice users.

The display panel provides directions for the ink-replacement procedure.

Print heads can be replaced at any time. Print-head life can vary, and it depends on the amount of ink being released through the print head. The display panel guides the user through easy-to-follow steps to replace or install a print head. The ink head contains all five colors (CMYK and matte black) with sealed ink lines that connect to ink lines from the ink tanks.

Once the head is inserted and the covers are put back in place, the machine does its adjustments, and then it is ready to print.
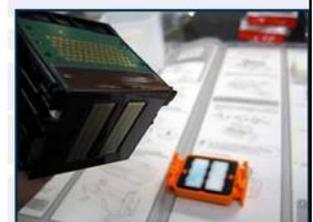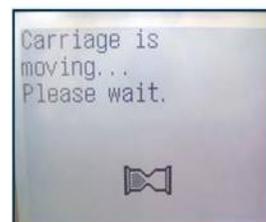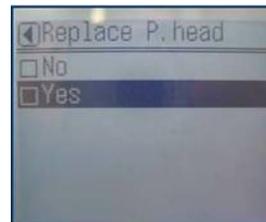
Print-head replacement is easy to perform.

What We Liked

- We like the advanced control over basic maintenance issues for the iPF750 printer, and using the GARO Status Monitor software helps operators resolve print issues without having to call a service technician, or visit the printer itself and try to resolve the issue.

What We Would Like To See

- BERTL would like to see a more user-friendly way of replacing the scanner's consumables.

Copying Accuracy

BERTL performed a series of quality tests with the combined scanner and printer. We usually conduct these tests by first scanning the test image and then printing it. This testing method is more demanding than using preconfigured files for printing because it results in a real-life scenario where a person walks up to the scanner, scans the image, and then prints it out using the built-in RIP in the Supra ImageFLOW software.

Text Details

Text details are another important test where we look at the impact of scanning small text size in different colors and then print them.

Black text scanned

Black text copied then scanned

Blue text scanned

Blue text copied then scanned

The text samples shown on the previous page indicate that even when scanning, printing, and then scanning again, the small text is still readable. The black text shows up sharper than the blue text. No doubt the iPF750 printer's 4 pl droplet size helps.

Color Accuracy
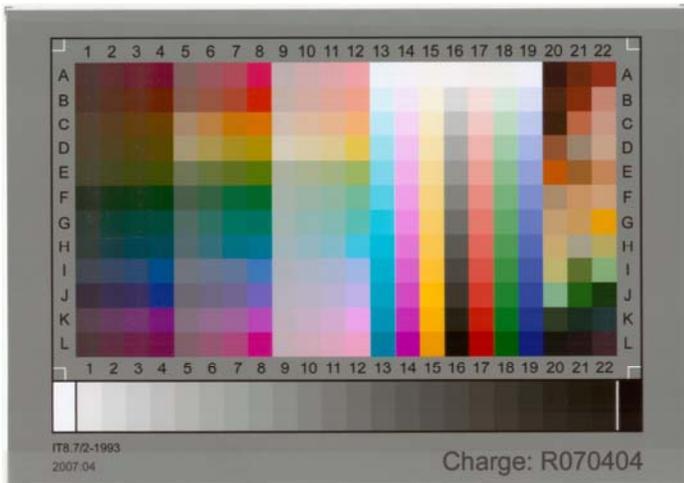
The scanned IT8 test chart

For our color accuracy test, we used the well-known ANSI IT8 test chart that is used to calibrate many color devices.

We scanned the test chart at 300 dpi using the sRGB color space and a Gamma of 2.2 (sRGB default). We then read each patch and compared them with the reference patches of true color value and determined the ΔE value indicating how accurately the scanned colors match the reference chart. The color accuracy score for the SK280 is excellent, and we contribute this fact to the Graphtec color-adjustment calibration procedure.

SK280	ANSI IT8.7 Color Matching	
Test Result	ΔE=3.4	Average
	ΔE=10.9	Worst Case
	ΔE=7.4	95%

We then printed the scanned IT8 test chart using the printer's best mode and glossy photo paper, and rescanned the printed version of the ANSI IT8 test chart. We measured the results again.
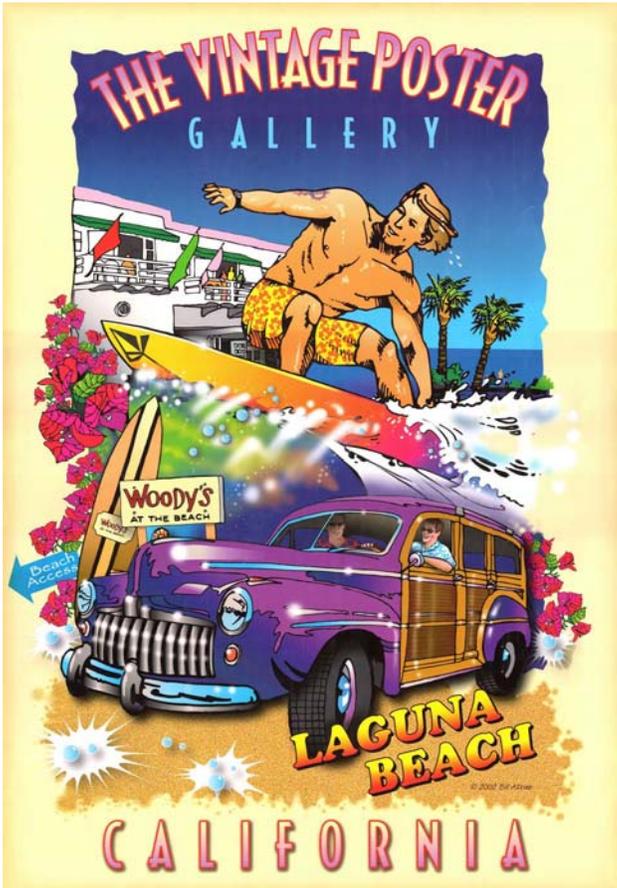
Scan->Print->Scan	ANSI IT8.7 Color Matching	
Test Result	ΔE=9.25	Average
	ΔE=20.17	Worst Case
	ΔE=16.51	95%

We should, of course, expect a much lower value since we need to take into consideration the color inaccuracy of the scanner, printer, and then the scanner again. However the result is actually good.
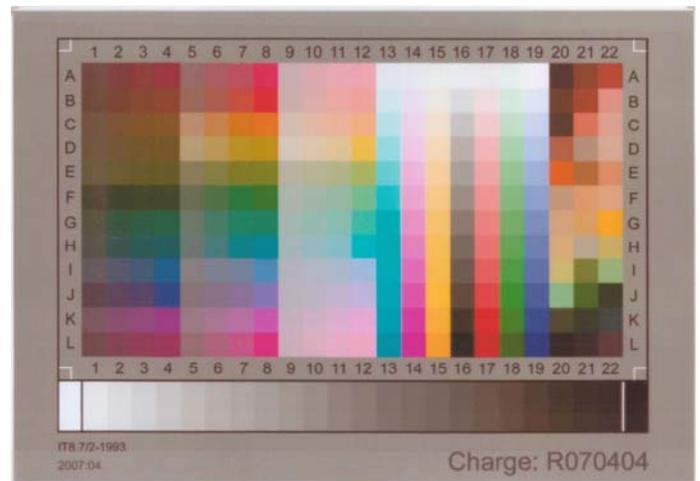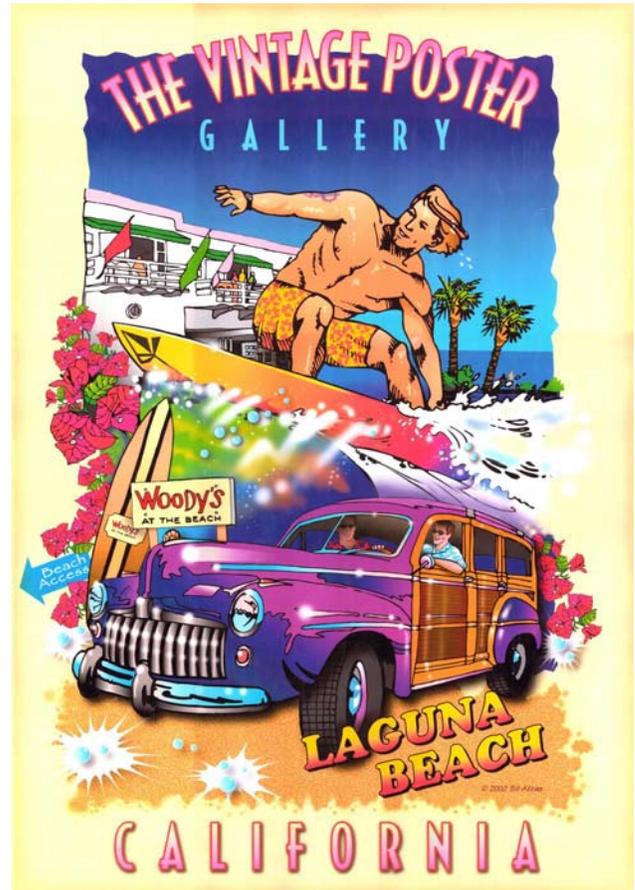

ANSI IT8 after printing and scanning.
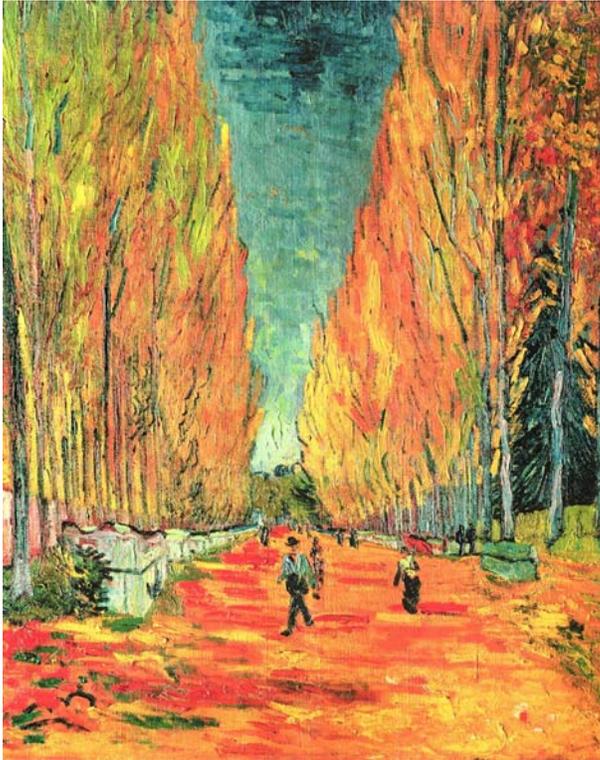
Poster Copying

Scanned poster image

Scanned, printed, and re-scanned poster image

In this test we look for the overall copy quality using posters. The overall copying process is very accurate; however, the colors are slightly less vivid. When considering that this is only a 5-color printer, the result is good.

Art Copying

Scanned original of artwork
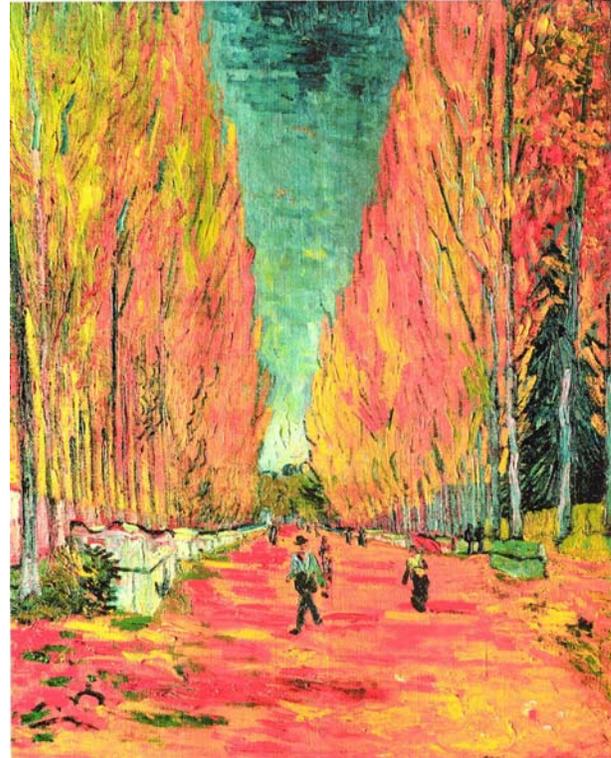
Scanned, printed, and re-scanned artwork

Using a different sample of artwork, we saw a slight color shift in the rescanned image. Again the result is acceptable, considering that the iPF750 printer has only 5 colors.

CAD Copying with Adaptive Thresholding

Adaptive thresholding is a scanning technology that cleans up engineering blueprints and other deteriorated drawings. Working with deteriorated CAD and AEC drawings is standard work for a MFP copy system.

We tested the MFP's ability to clean up the drawing and print it, both in terms of the result and how easy it is to quickly find the best settings for this process.
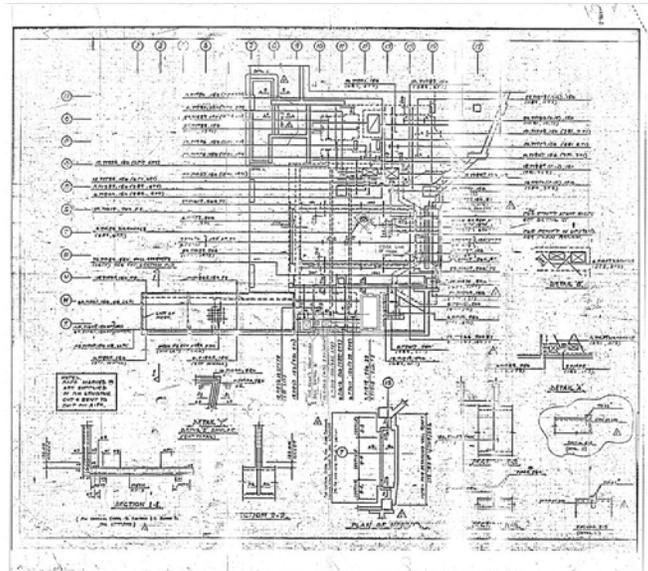
With Adaptive thresholding, scoring is based on a subjective scale from:

- **Best** – The best available in the industry in terms of clean up and ease of use.
- **Good** – Good clean-up result, better than average and easy to use.
- **Average** – Average clean-up result and average ease of use.
- **Poor** – The clean up result is poor, and it is difficult find the best setting.
- **N.A.** – Adaptive clean up is not available.
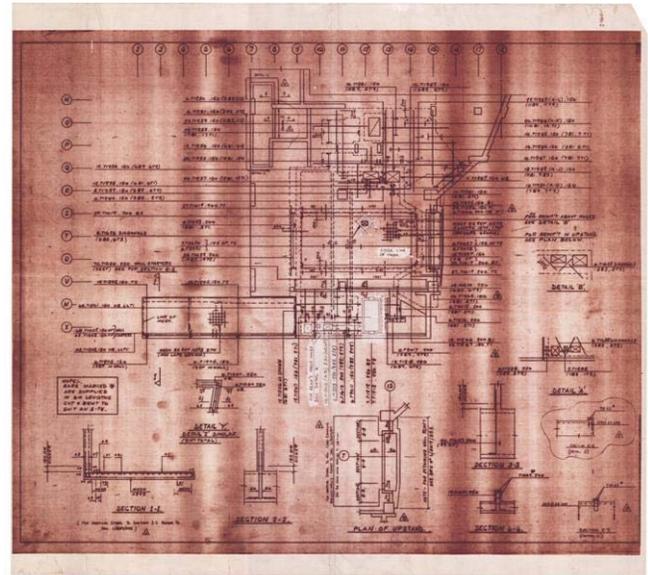
EIS Supra	Adaptive Thresholding
Test Result	Average
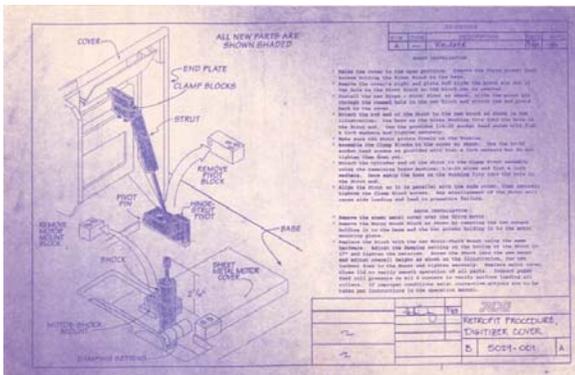
Original scanned in color

After adaptive scanning

Original scanned in color

With adaptive thresholding

What We Liked

- BERTL was pleased with the scanner's color quality.
- The copy system handled deteriorated black and white drawings well.
- We were surprised by the good results in the copying process despite the iPF750's limitation of 5 colors.

What We Would Like To See

- BERTL does not have any recommendation at this time.

The EIS Supra is a well-designed, quality MFP system available for only $16,995. Both the Graphtec SK280 scanner and the Canon iPF750 printer are well matched for this mid-range MFP system. The ERGO stand is very functional and versatile, and it can accommodate a range of different scanners and printers. The Rocket controller is powerful enough to drive the combined solutions without any problem. Finally the ImageFLOW application binding all components together to create a coherent MFP solution was a pleasant surprise. Instead of focusing on making the solutions feature-rich and complex to operate, Paradigm instead chose simplicity and ease of use. This will limit the Supra in the top professional environment, however it will make it the preferred solution for companies with small-to-medium copying needs. The lower price point will also make it attractive.

If your needs call for higher performance and quality, Paradigm offers the EIS Ultima II solutions. If you still consider the $16,995 price tag too high and are willing to sacrifice speed and performance, then Paradigm offers the EIS Quatra entry model for nearly half the price.

Recommendation

We recommend the EIS Supra due to its use of best-of-breed components and its relatively low price of $16,995 for a complete color MFP solution. Although the solution is composed of different manufacturers' equipment, Paradigm takes full responsibility for the combined solutions and offers a one-year on-site warranty for the EIS Supra.

The EIS Supra color MFP solution is recommended for the facility management, CAD/GIS, and reprographics markets.

PROs	CONs
Ease of use and simple to operate.	May lack certain high-end features found in more expensive solutions.
Touch screen interface.	
Good for walk-up copying and occasional needs.	
One-year on-site warranty.	

What We Liked

- BERTL liked the ERGO stand for the combined solutions and found it to be very versatile, fitting virtually all possible combination of scanners and printers.
- The installation procedure is easy to follow even though it is found in three different setup manuals. It can be performed by anyone in an organization who has average experience in installing new software and hardware on a computer.
- Instructions for assembly and installation are easy to follow with plenty of drawings and instructions.
- Typical setup and assembly time for the complete MFP solution is 60 minutes.
- BERTL liked the easy-to-use and well-designed ImageFLOW interface that enables the novice user to use it as a walk-up copier.
- We also liked that ImageFLOW enables operators to customize the color mode default settings.
- We like the advanced control over basic maintenance issues for the iPF750 printer, and using the GARO Status Monitor software helps operators resolve print issues without having to call a service technician, or visit the printer itself and try to resolve the issue.
- BERTL was pleased with the scanner's color quality.
- The copy system handled deteriorated black and white drawings well.
- We were surprised by the good results in the copying process despite the iPF750's limitation of 5 colors.

What We Would Like To See

- BERTL would like to see an overall setup assembly instruction manual.
- BERTL would like the scanner calibration to be more fully automated, e.g., automatically find the 6 patch coordinates, instead of requiring the operator to do it manually.
- Instead of having to feed two calibrations sheets into the scanner, BERTL would like to see a single calibration sheet for doing this job.
- The ImageFLOW user manual could be more detailed.
- After previewing, we would prefer not to have to reload the paper in the scanner to make the final scan. Currently the scanner can't rewind the document, instead, it has to be re-loaded.
- More features like Gamma for photocopying would be helpful, but not at the expense of the easy-to-use interface.
- When the unit of measuring is in inches, ISO and DIN document size standards should disappear (and vice versa for millimeters with the ANSI and ARCH standards) to reduce overall screen clutter.
- We would like a better and more precise way to crop images using the touch screen.
- An improved scanner reaction time from touching the scan button to seeing the image on the screen would also be helpful.
- BERTL would like to see a more user-friendly way of replacing the scanner's consumables.

The imagePROGRAF iPF750 is a 36-inch wide, wide-format ink-jet printer priced at $4,495 that is designed for technical documents and general use, for use by architects, engineers, construction, CAD, GIS, Government, Business, Education, and similar industries where quality and production speed matters. It can produce 36-inch full-color prints at 2,400 x 1,200 dpi using a 5-color reactive ink set system and a print heads with a total of 15,360 nozzles. Its pigment-based inks provide light fastness suitable for indoor applications ranging from fine-art prints to technical documents.

Some of the printer's recommended features include:

- The imagePROGRAF utilizing a 5-color ink system that delivers a wide color gamut.
- Users can replace ink tanks while printing, so that printing can continue uninterrupted.
- Choice of roll or cut-sheet paper capability.
- The iPF750 can print on a wide range of paper types, from standard paper to various photo paper types, instant-dry paper, commercial proofing paper, water-resistant art canvas, adhesive matte stretch vinyl, fine art and sign media, and more, making it extremely versatile.
- Canon bundles the printer with its Printer Driver 2009 for printing from Microsoft Windows applications and from Apple Macintosh computers.
- Canon also includes a print plug-in for Ms Office. This is the first time that a wide format printer has a feature like this for Microsoft Office applications.
- The Status Monitor can manage and maintain a pool of Canon iPF series of printers through a single coherent user interface.

Overall, Canon's imagePROGRAF iPF750 wide-format color printer performed very well in testing.

In testing, BERTL observed the following:

- The imagePROGRAF iPF750 is of solid quality that is built to last.
- Replacing the ink cartridges is simple and easy to perform, and Canon provides ample, easy-to-follow instructions for this procedure.
- Loading media rolls is a relatively easy procedure.
- Both the Color and Grayscale output was outstanding.
- Solid fill and gradients were produced with no apparent banding.
- Continuous tones exhibited outstanding color fidelity and very good fine detail.

Considering the Canon imagePROGRAF iPF750's superior overall performance in testing, excellent ease of use, and high-quality image quality, BERTL awards the imagePROGRAF iPF750 wide format printer, it's Four and Half Star *Outstanding* rating and therefore highly recommends the device for architects, engineers, CAD, GIS, corporate graphic, and general business users that require a fully functional 36" wide format printer.

Summary

About BERTL

The success of an organization depends on its ability to manage its information and assets. An effective workflow process requires the complex integration of information, devices, software, and people.

IT managers, office managers, and other knowledge management professionals need to know what digital imaging devices would best serve their specialized workflow processes.

BERTL's services are designed around this real-world framework, delivering business consumers the independent analysis and insight needed to make critical decisions about digital imaging's role in their organization.

Independent Analysis and Insight

BERTL's reports, comparative data, and strategic guides look at digital imaging through the eyes of the business user. The research examines not only the technical features, but also vertical market applications, and business benefits. The impact on worker productivity is a primary concern.

BERTL is 100 percent independent. It receives no funding from manufacturers and all product evaluations and reports are published at BERTL's own expense for its subscribers. Business users worldwide trust BERTL for objective, unbiased analysis of digital imaging systems.

BERTL Services

Reports and Star Ratings

BERTL analysts provide detailed reports on the technical and practical benefits of thousands of color and monochrome workgroup, office, graphic arts, and production devices.

Product Specifications

DataCheck Gen II provides the most current competitive data on printers, copiers, MFPs, fax devices, wide format printers, scanners, and more.

News, Interviews, and Analysis

The ITchat online magazine provides insight into the dynamics and trends of the digital imaging marketplace through interviews, feature articles, and software reviews.

BERTL Awards

BERTL analysts recognize the leading devices and software solutions in the annual BERTL's Best awards. BERTL also honors the performance of manufacturers in the annual Readers' Choice selections.

Contact BERTL

363 Route 46 West
Fairfield, NJ 07004 USA
Tel 1.973-882-0200
Fax 1.973-882-0201
Email: info@bertl.com
www.BERTL.com