

TECHNOLOGY GUIDE



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CapturePerfect

Kofax VRS

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Product Concept

Production document scanner provides businesses with a high-performance, reliable, and flexible scanning solution to help enhance document management systems

- *High-speed A3 color duplex scanners in low-volume production category*
- *130 ppm / 260 ipm with DR-G1130
100 ppm / 200 ipm with DR-G1100
(A4/LTR, Landscape, 200 dpi, Grayscale mode)*
- *Capable to scan various type of papers and reliable paper feeding*
- *Onboard chip for faster image processing*
- *Ultrasonic double feed sensor with multi-zoning capability*
- *User-friendly design features, including an intuitive control panel with job functions*
- *Durable, with a 30,000 / 25,000 sheets of suggested daily volume (DR-G1130/G1100)**
- *Diverse hardware and software options to expand your productivity*
- *ENERGY STAR compliant for power consumption, compliant with RoHS Directive*



Features at a Glance

Type: Desktop Sheet-fed

Document size: Business card size to A3 / 11x17
Support Folio mode
Supports two long document: modes;
up to 3 meters or 1 meter long

Scanning Speed: A4/LTR Landscape at 200 dpi in Grayscale mode
130 ppm/260 ipm (DR-G1130)
100 ppm/200 ipm (DR-G1100)

Sensor: 3-line CMOS contact image sensor

Optical Resolution: Up to 600 dpi

Light Source: RGB LED (Red, Green, and Blue)

Scanning Modes: Black and White, Error Diffusion, Advanced Text Enhancement (I and II), 8-bit Grayscale, 24-Bit Color, Auto color detection
Long Document, Manual feeding, Separation Hi, Separation Low, Non Separation

Interface: Hi-Speed USB 2.0

Driver: ISIS / TWAIN

Feeding Tray Capacity: 500 sheets

Suggested Daily Volume: 30,000 scans/day (G1130)
25,000 scans/day (G1100)

According to internal Canon Electronics Inc. testing

Bundled Software: ISIS/TWAIN Driver
Job Registration Tool
CapturePerfect 3.1
Kofax VRS Basic

Dimension: 18.9 x 21.1 x 12.4”**
(W x D x H) **With Feed Tray closed.

Weight: Approx. 50.3lbs



DR Technology: Document Feed

A dedicated onboard image processing chip enables ultra-rapid scanning

The DR-G1130 boasts document processing at a rate of 130 pages per minute in B&W, grayscale, and color; and the DR-G1100 at 100 ppm. Even with multiple image processing functions selected, the scanner maintains its fast speed thanks to its dedicated image processing chip. In addition, onboard JPEG compression is available for speedy transfer of high-resolution images.



DR-G1130



DR-G1100



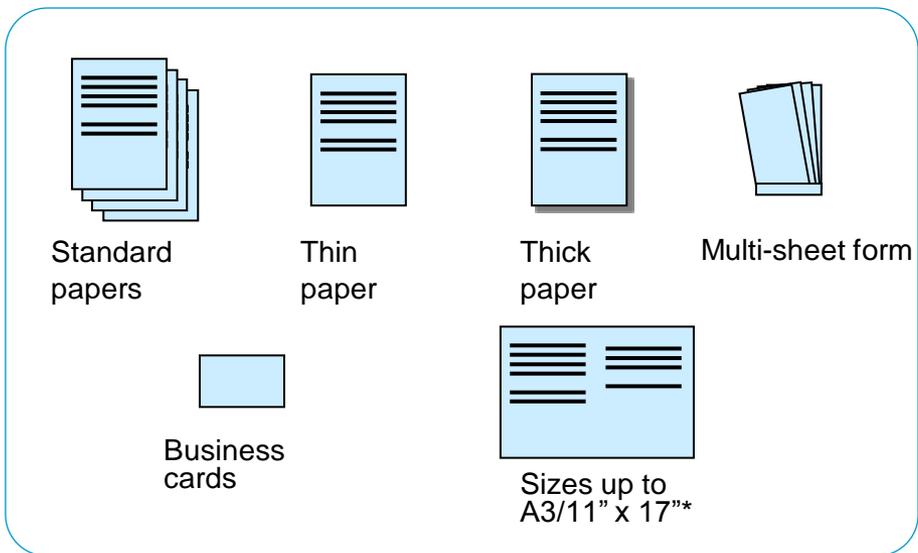
A4/LTR-size documents, Landscape, 200 dpi

* Not all image processing functions are processed by the onboard chip; some are processed by the scanner driver on the PC. (See notes for details.)

DR Technology: Document Feed

Smooth scanning of a wide variety of documents

The scanner ensures smooth scanning of a wide variety of document types, including thin documents, thick documents, multi-sheet forms, and other non-standard documents—from business card size all the way up to A3 (11 x 17 in.)*. Three feeding methods are available: Automatic Feeding, Manual Feeding (manual batch feeding by hand), or Continuous Manual Feeding mode.



Manual Feed mode

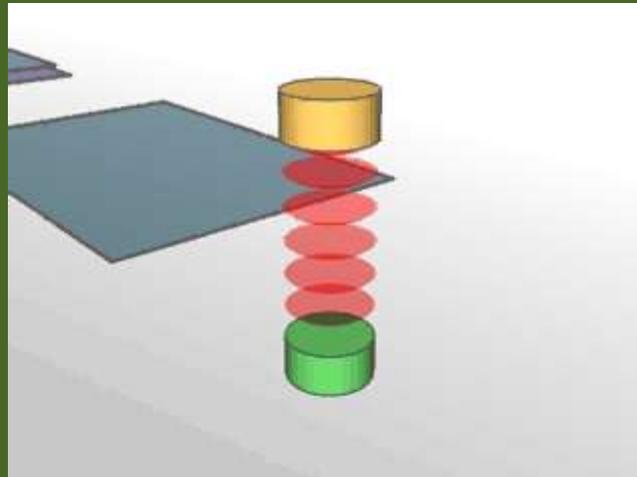
** Larger documents can be scanned using a special Folio scanning process (see slide 22 for details), and long documents can be scanned using Long Document Mode (see supplement for details).*

DR Technology: Document Feed

Ultrasonic Double Feed Detection

For protection against double feeds, the scanner is equipped with ultrasonic sensors that can detect the gap between overlapping pages and prevent them from going through the scanner at the same time.

- When a double feed is detected, scanning stops to allow you to separate the pages.
- This prevents lost images and assures you that each page is scanned without the need to check image data.

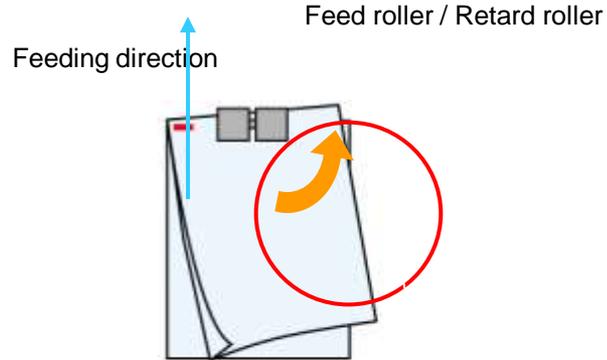


DR Technology: Document Feed

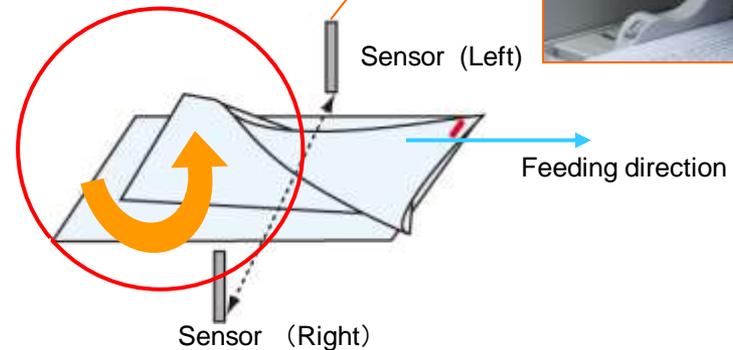
Staple Detection

The scanner's staple detection feature detects when documents are stapled together and immediately halts feeding to prevent damage to the document and/or scanner. The scanner's sensors detect the bent corner of the stapled document, an error message is displayed, and the scanning process is halted.

View from above



Side view

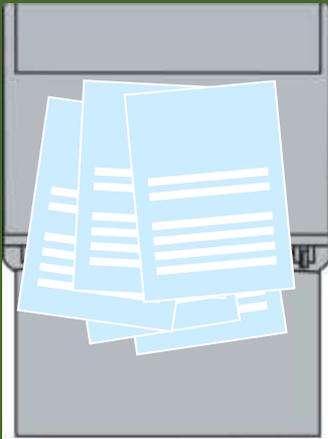


The sensor detects irregular movement of the top sheet and stops feeding

DR Technology: Document Feed

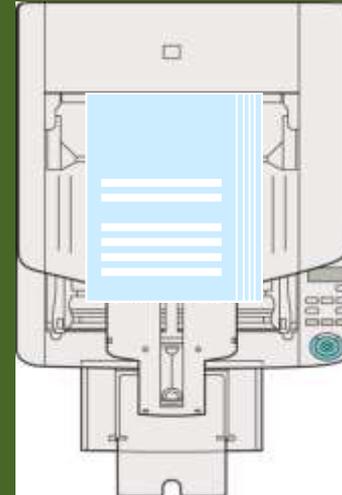
Improved eject brake for neatly aligned documents

The scanner's paper ejection mechanism features a new motor with a brake that controls the speed of ejected documents. Scanned documents are neatly stacked in the document eject tray, which saves you from having to take the time to straighten batches by hand.



Conventional scanner

Ejected documents are messy, and must be straightened and aligned by the operator



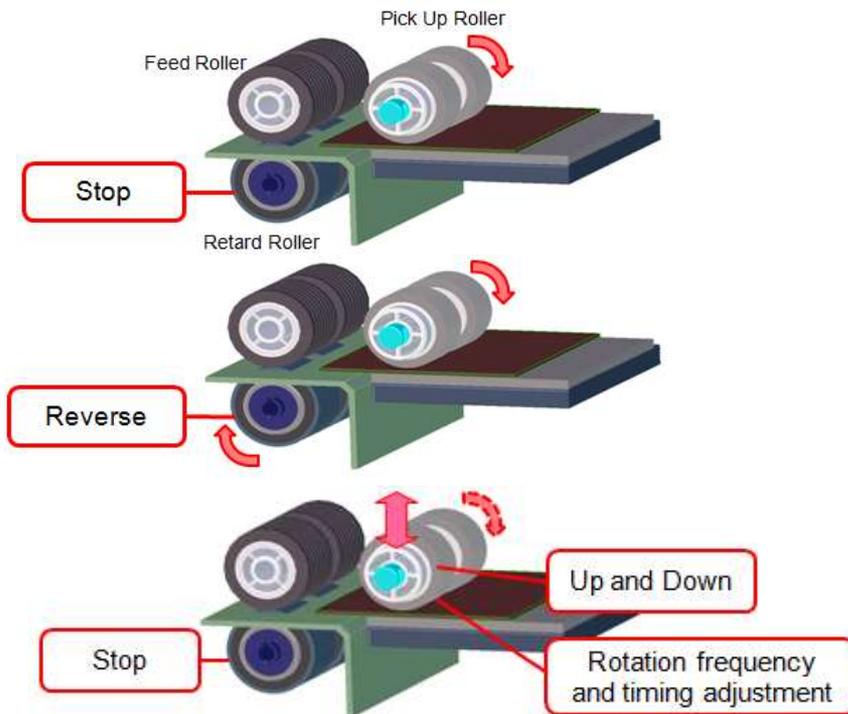
DR-G1130 / DR-G1100

Ejected documents are neatly stacked by the scanner, so the operator doesn't have to straighten the batches.

DR Technology: Document Feed

Paper feeding mode to cover various type of papers

Three different paper feeding modes are available to carry variety of papers such as the thin papers or the papers which have strong surface-friction drag.



Normal mode <Default>

Retard Roller is at a stop to separate the second and later pages.

Separation : High

Retard Roller has reverse torque to push back the second and later pages.

Separation : Low <Soft>

Retard Roller is at a stop to separate the second and later pages.

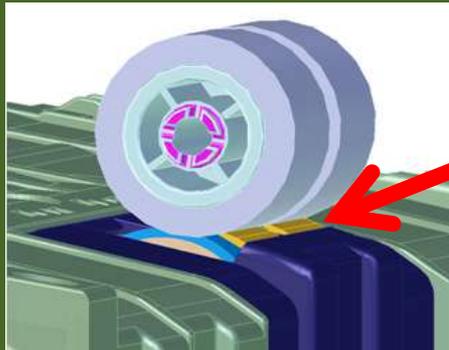
Pick Up Roller rotate intermittently not to move the paper fast more than necessarily.

DR Technology: Document Feed

Separation pad to avoid double feed

The urethane pad is newly installed at the edge of retard roller cover, where the contact of Feed roller. This pad works to separate paper before the paper touches Retard roller and avoid double feed and any damage to the paper. The Separation pad is consumables that must be replaced after feeding about every 6,000,000 pages and is setup as merchandise.

Separation pad is noted as yellow

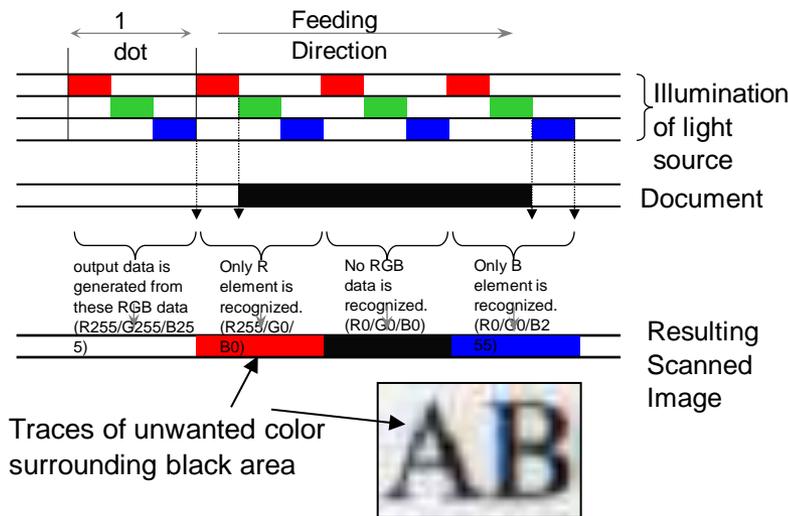


DR Technology: High Quality

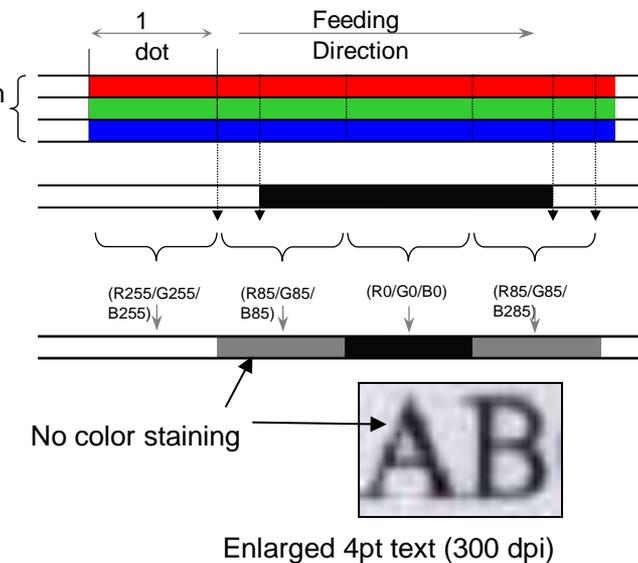
3-Line CMOS sensor for superior image quality

The 3-Line CMOS CIS sensor is also responsible for the scanner's remarkable accuracy and reproduction of detail. Document images are free of unwanted color staining common to traditional 1-Line sensor scanners. 600 x 600 dpi optical resolution further assures exceptional image clarity with fine print and line art.

■ Conventional 1-Line CMOS image sensor RGB LEDs are illuminated one at a time



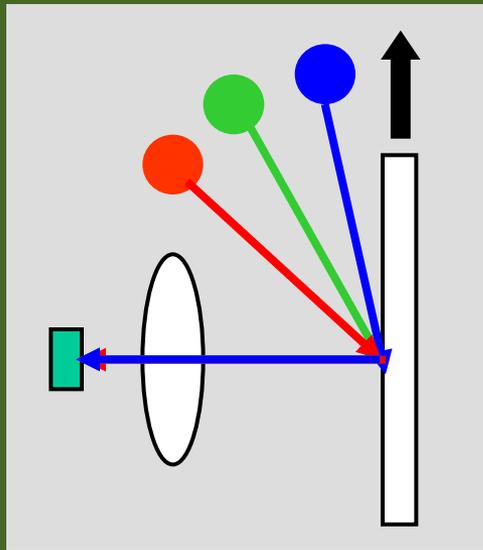
■ Canon's 3-Line CMOS image sensor RGB LEDs are illuminated all at once



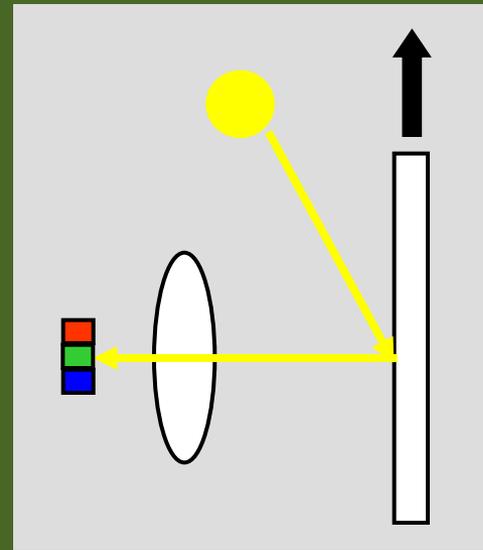
DR Technology: High Quality

3-Line CMOS sensor for fast, accurate scanning

With conventional document scanners, color images typically take as much as three times longer to produce than black-and-white images, but the scanners in this series can deliver either type of image at the same top speed. 3-Line CMOS sensor technology offers the benefits of faster scanning with better tonal accuracy.



Conventional 1-Line Sensor
Alternately captures each RGB color
separately

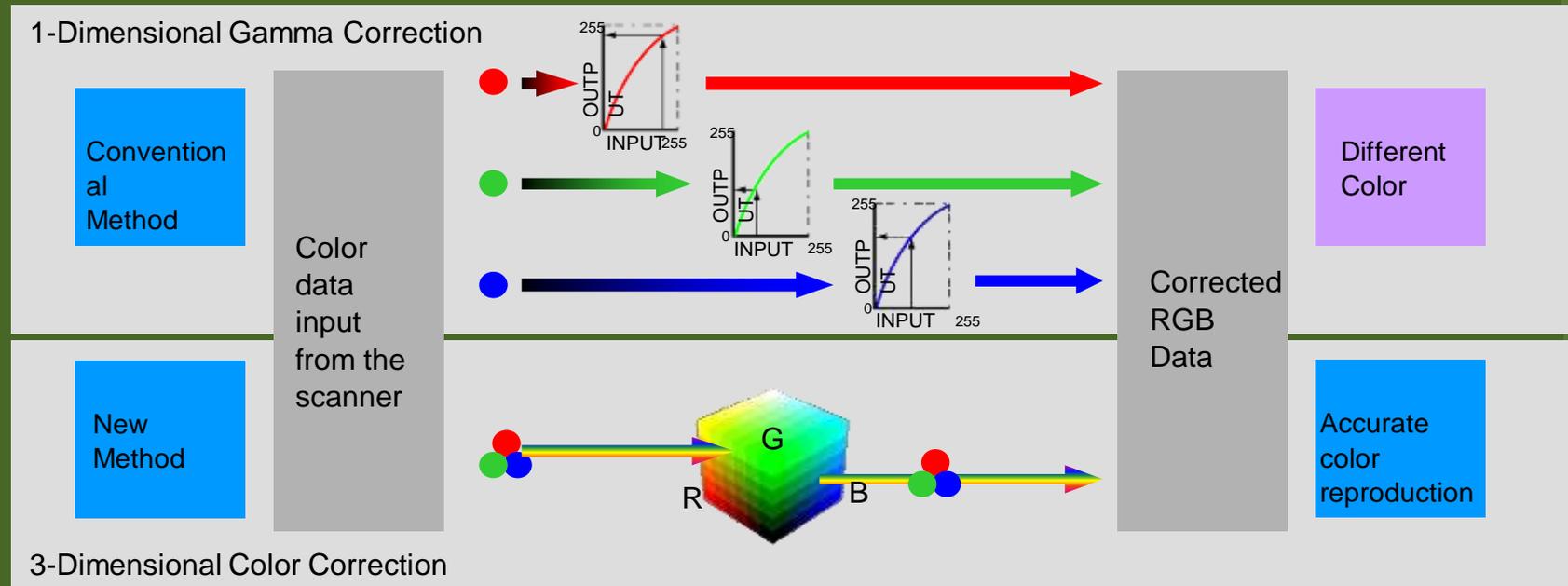


Canon's 3-Line Sensor
Simultaneously captures all colors

DR Technology: High Quality

Unprecedented color reproduction with 3-Dimensional Color Correction

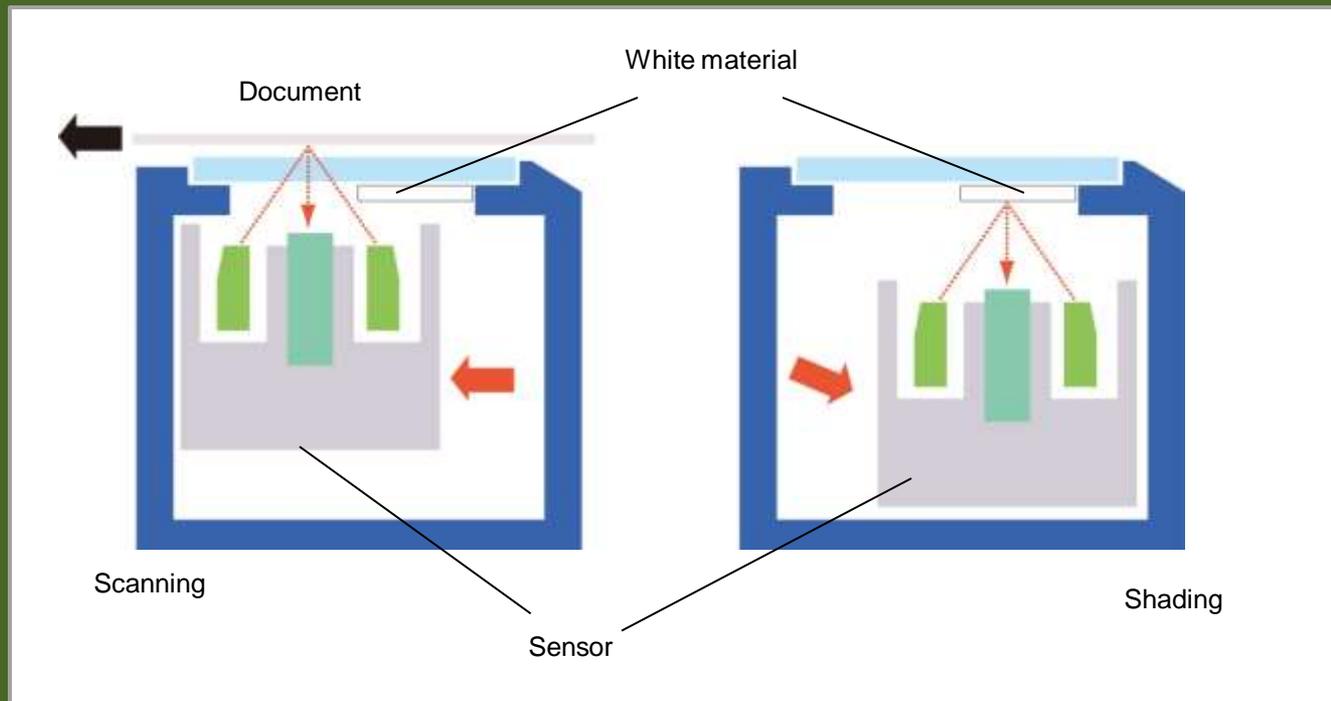
The 3-Dimensional Color Correction function faithfully reproduces a document's color information using an incorporated color conversion chip to pinpoint the exact RGB coordinates in one process. This helps the scanner to achieve unprecedented color accuracy that's true to the original document.



DR Technology: High Quality

Automatic scanner calibration with new shading mechanism

To ensure consistent, uniform image quality, the scanner performs an automatic calibration process called 'shading' prior to each scan job. In a mechanism that provides protection against dust, the image sensor shifts to calibrate itself against a special white shading surface that's affixed directly on the sensor glass.



DR Technology: Image Processing

Image Processing Functions

The DR-G1130/G1100 have variety of image processing functions as follows. For the detail of each function, please refer to the next page and onward.

- Deskew
- Auto Paper Size Detection
- Auto Color Detection
- Skip Blank Page
- Color Dropout(R/G/B/Color elimination)
- Color Enhancement(R/G/B)
- Text Enhancement(ATEI and II)
- Background Smoothing
- Punch Hole Removal
- MultiStream function
- Border Removal
- Adjustable gamma settings
- Prevent Bleed Through / Remove Background
- Moiré Reduction
- B&W Contrast
- Text Orientation Recognition
- Shadow Cropping
- Character Emphasis

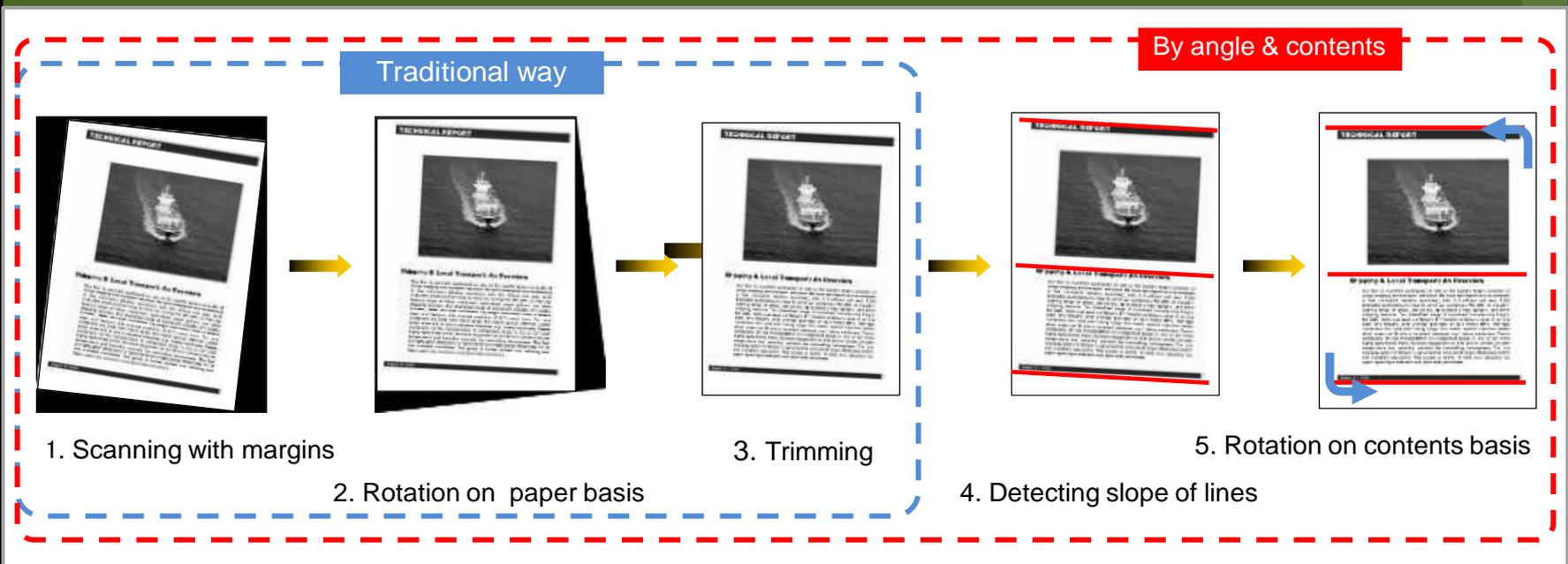
Gray mode is
newly
supported

DR Technology: Image Processing

Deskew

If a page enters the scanner slightly skewed, the ISIS/TWAIN driver software will automatically straighten out the scanned image.

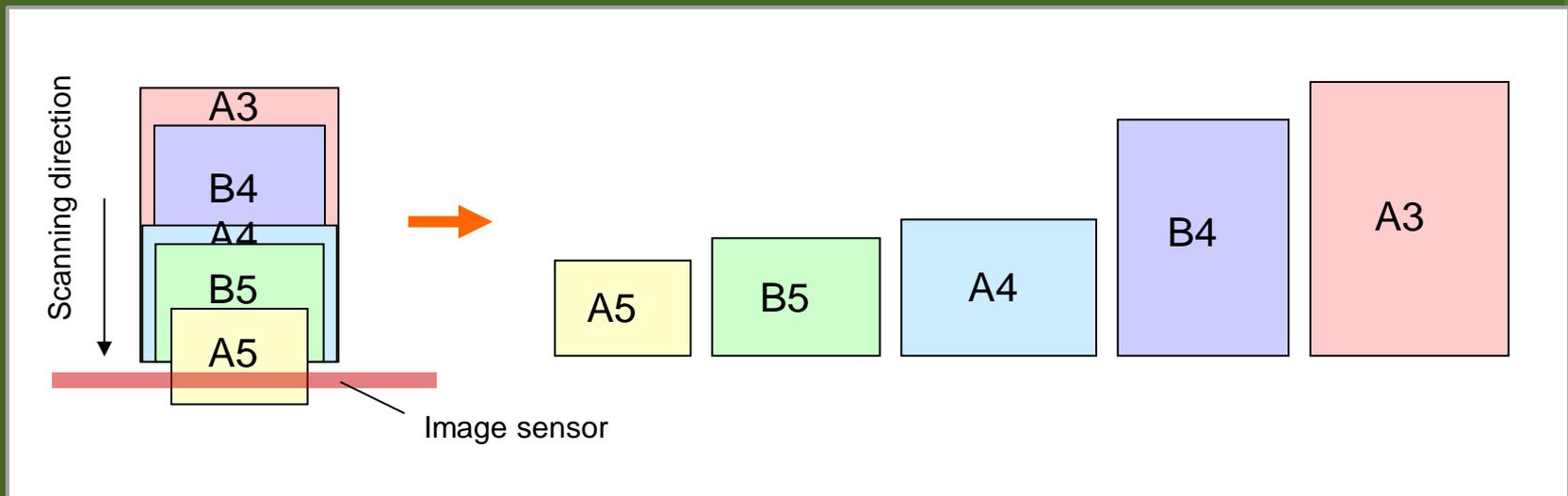
To provide properly oriented document image, we have newly added the way of deskew function which detects the skewed angle from the contents in the document such as lines or character strings for correction.



DR Technology: Image Processing

Auto Paper Size Detection

Batches with mixed paper sizes? Just load them onto the scanner and get properly-sized images for each page in your batch – save yourself the time and trouble of sorting batches by paper size.



DR Technology: Image Processing

Auto Color Detection <Color/Gray detection or Color/BW detection>

This mode allows the scanner to automatically determine which documents of a mixed batch should be saved in 1) color or gray, or 2) color or black-and-white, based on detected color content with a set threshold value. This means you don't have to separate black-and-white and color documents prior to scanning, and image files are kept smaller than if scanning the whole batch in color mode.



Scan a stack of mixed documents in Auto Color Detection mode



Get multi-page or single page image files, with color documents in 24-bit color and black & white documents in the binary mode of your choice

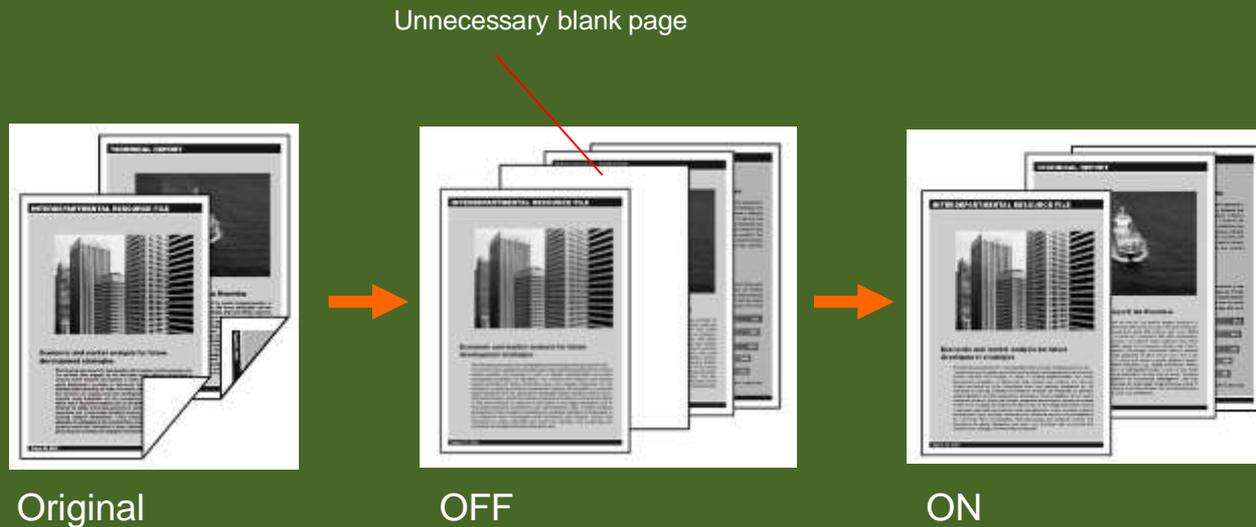


Depending on the scanning application software you're using, this function does not work.
(This function is supported by CapturePerfect.)

DR Technology: Image Processing

Skip Blank Page

Useful when scanning batches that include single-sided and double-sided documents mixed together, this function automatically removes blank pages from the image data, which leads to smaller file sizes as a result.

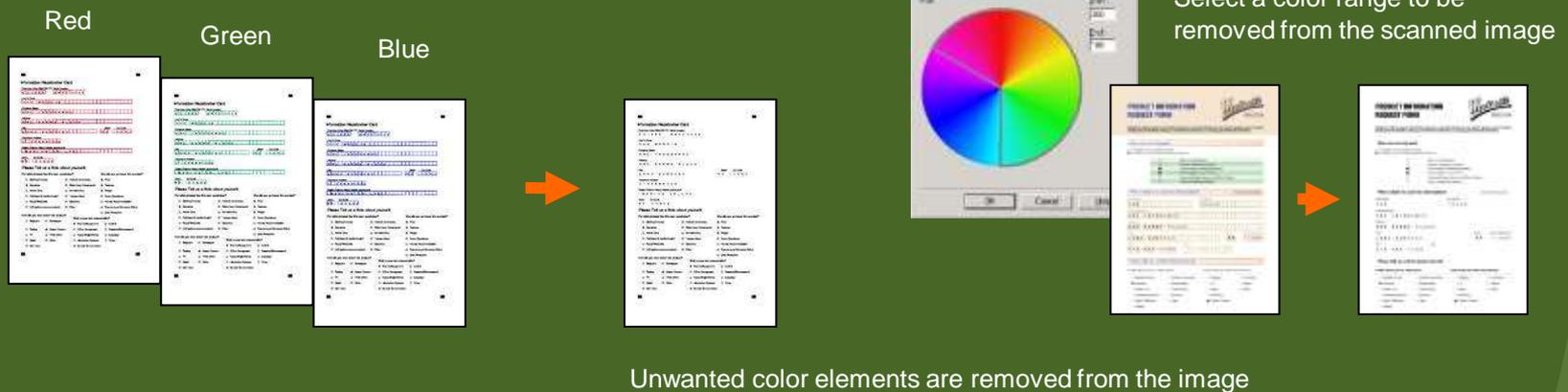


Automatically removes unnecessary blank pages from the image file

DR Technology: Image Processing

Color Dropout (R/G/B/Custom)

Document images can be made more suitable for OCR applications by removing unwanted color elements such as lines and shaded boxes. You can remove red, green, blue, or you can select a specific color range to remove from the scanned image, with different settings for the front and back sides of pages.



Alternatively, for scanning documents with stamps, it can be useful to make color elements (red, green, blue or user-selected color) of a document more visible in the image data with Color Enhancement.

DR Technology: Image Processing

Two Text Enhancement modes

The scanner offers two Text Enhancement scanning modes you can use to get clearer, more legible black and white images from documents with hard-to-scan elements. Each mode should be selected according to document type.

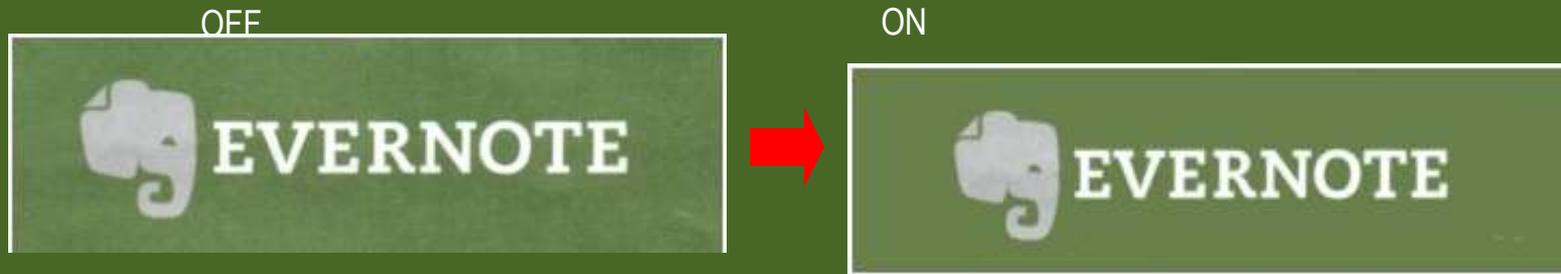


	Advanced Text Enhancement	Advanced Text Enhancement II
Effective documents type	<ul style="list-style-type: none">• The documents with uniform density <p>*ATE processes its text enhancement by analyzing the entire image.</p>	<ul style="list-style-type: none">• The documents with uneven density• The documents with patterned background or light colored text on light colored background <p>*ATE II processes its text enhancement by analyzing each part of the document</p>
Result	<ul style="list-style-type: none">• Without whitening characters inside• Can extract characters clearly from the documents with deep colored background	<ul style="list-style-type: none">• For removing reticulated or patterned background and enhancing the legibility

DR Technology: Image Processing

Background smoothing

Scanned images may be difficult to read by the condition of document -such as document with uneven dark background. To save such documents with better legibility, we have added the new image processing function, Background smoothing. This function reduces unevenness and smoothes scanned document data. User can set this function in “Image processing” in Driver dialog. This function will not be active on binary mode.



DR Technology: Image Processing

Punch Hole Removal

Typically when scanning documents with binder holes punched in them, the holes will appear in the scanned image as black dots. This function detects and whites out these black dots for a cleaner-looking image.



Original document

Scanning



Without
Punch Hole Removal

Processing

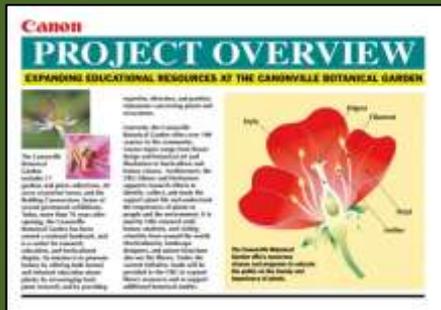


With
Punch Hole Removal

DR Technology: Image Processing

MultiStream™ function

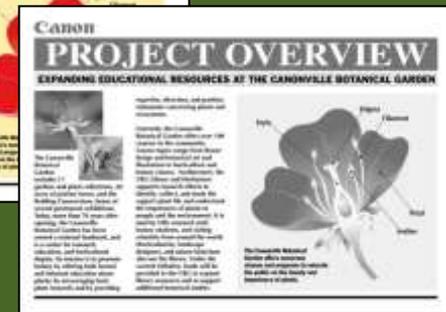
The scanner driver supports MultiStream, which, if also compatible with your scanning software, can create two images with different scanning conditions from a single pass. One output, for example, can be in color and the other in black-and-white. The color image can then be saved for archiving, while the black-and-white image can be saved for OCR use.



Original document



300 dpi color image

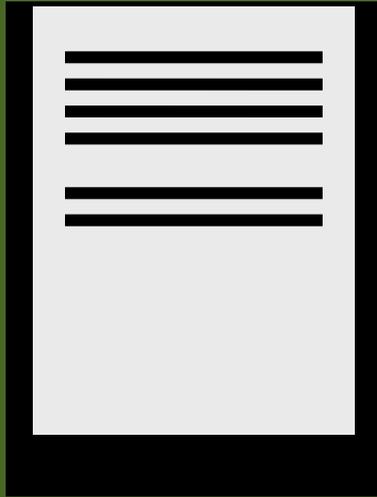


200 dpi black-and-white image

DR Technology: Image Processing

Border Removal

This function cleans up scans of small documents or papers of non-standard sizes. It replaces the unattractive border around a document with white space.



Scanned with black border

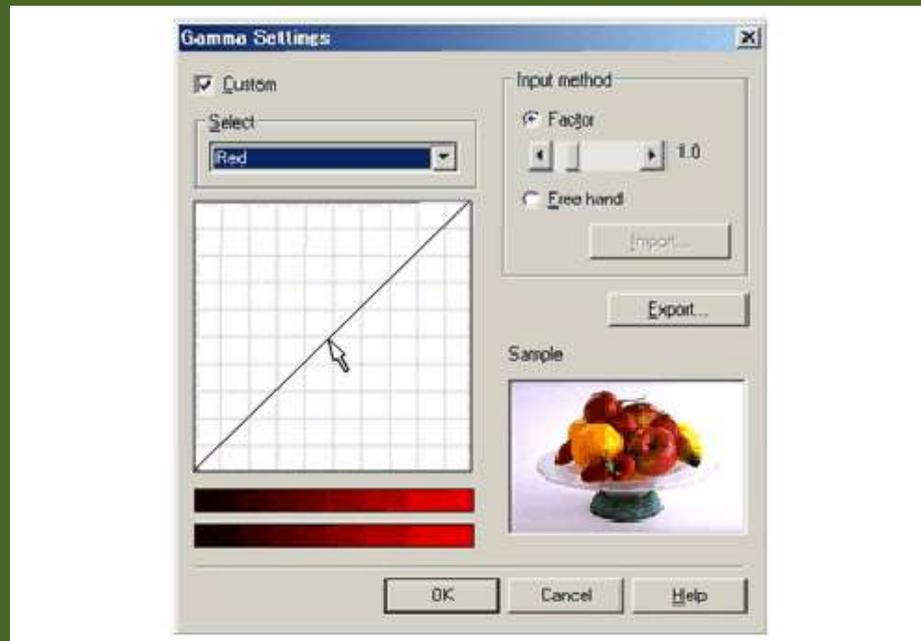


Border changed to white

DR Technology: Image Processing

Adjustable gamma settings

The overall tonal quality and accuracy of document images can be easily adjusted by using the gamma settings. Individual gamma settings are available for grayscale, red, green, and blue, which can each be customized by manipulating their gamma curve. The results are displayed in a sample image, which changes in real time as the curve is moved, making it easy for you to achieve the desired effect.



DR Technology: Image Processing

Prevent Bleed Through / Remove Background

This function keeps text and/or images on the back side of thin documents from showing through in the scanned image. This function can also remove unwanted backgrounds to produce a cleaner-looking image.

Prevent bleed-through



OFF



ON

Remove background



OFF



ON

Prevent Bleed Through / Remove Background produces a cleaner-looking image

DR Technology: Image Processing

Moiré Reduction

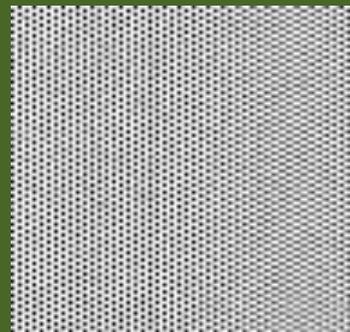
Unwanted moiré patterns may appear in color or grayscale images of documents with heavy graphic or background elements when they are scanned in low resolution. To reduce these pattern effects, this scanner features two Moiré Reduction modes that can be selected according to speed.

High-Speed Moiré Reduction

Gives priority to scanning speed. Available when scanning at 240 dpi or less. Fast, produces good quality images.

High-Quality Moiré Reduction

Gives priority to image quality. Available when scanning at 300 dpi or less. Memory-intensive and slower, produces high-quality images.



OFF



ON

High-Quality Moiré Reduction

DR Technology: Image Processing

B&W Contrast

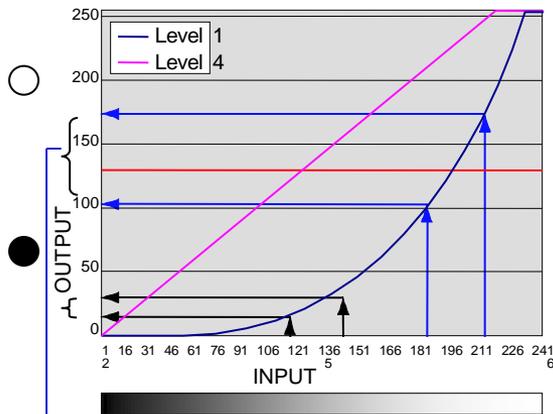
B&W Contrast ensures highly readable results when scanning low-contrast documents in black & white. Seven levels of contrast are available, with 1 for documents with light text on a light background and 7 for dark text on a dark background, and should be selected according to your document. How it works: the scanner first digitizes the scanned image (INPUT) into 256 levels of gray. Contrast between text and background is adjusted according to the selected contrast level, and data is then binarized and output as either black or white.

Contrast Level 1

Completed	Origin
5/15/2005	SFO-otp
5/15/2005	NYN-otp
5/10/2005	MIN-ftp
5/13/2005	PAR-otp



Completed	Origin
5/15/2005	SFO-otp
5/15/2005	NYN-otp
5/10/2005	MIN-ftp
5/13/2005	PAR-otp



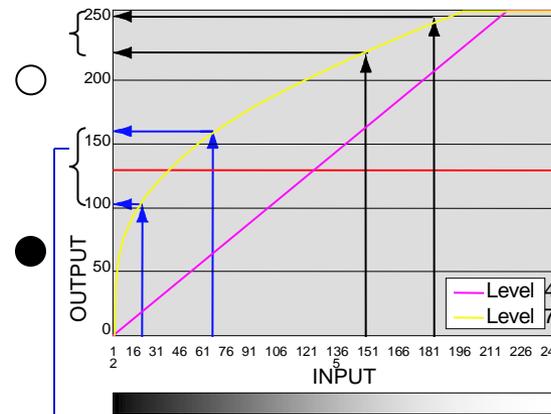
This contrast curve is ideal for light text on a light background.

Contrast Level 7

Completed	Origin
5/15/2005	SFO-otp
5/15/2005	NYN-otp
5/10/2005	MIN-ftp
5/13/2005	PAR-otp



Completed	Origin
5/15/2005	SFO-otp
5/15/2005	NYN-otp
5/10/2005	MIN-ftp
5/13/2005	PAR-otp

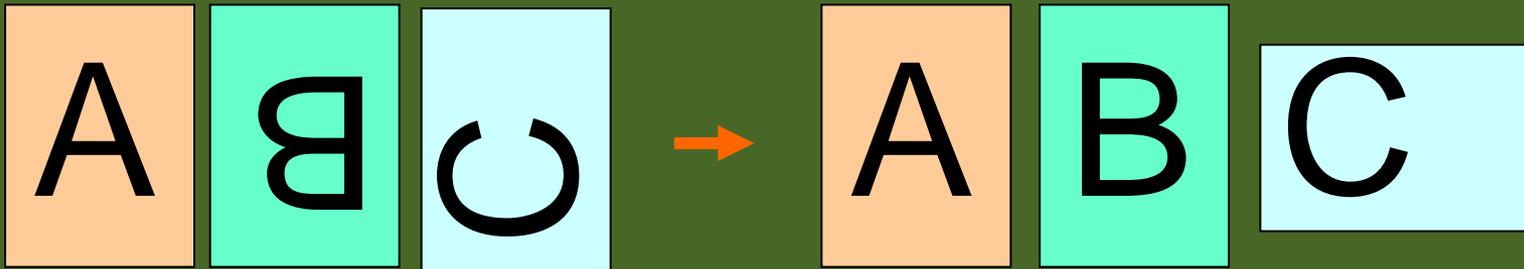


This contrast curve is ideal for dark text on a dark background.

DR Technology: Image Processing

Text Orientation Recognition

Suppose the documents in your batch are facing different directions. With Text Orientation Recognition, you can have the scanner check the text on each fed document and rotate the image accordingly. Each document will be displayed and saved with the correct orientation.



Documents facing in different directions...

... are automatically detected and rotated accordingly.

DR Technology: Image Processing

Character Emphasis

By using this function, characters or lines in documents would be intentionally thicker in scanning image. It could be useful in the case it is necessary to improve visibility in display (especially for mobile e-book devices such as Kindle) or possibly useful to improve OCR recognition.

Character Emphasis Off

Today, Canon's advanced multifunction digital devices, such as the imageRUNNER Series featuring MEAP (Multifunctional Embedded Application Platform) technology continue to provide businesses with high-speed document scanning as part of their wide-ranging abilities. Dedicated digital

Body No.: **FP300001** EAN128
N° de serié:
Gehäuse Nr.: 
N° de cuerupo: (21)FP300001

Character Emphasis Maximum

Today, Canon's advanced multifunction digital devices, such as the imageRUNNER Series featuring MEAP (Multifunctional Embedded Application Platform) technology continue to provide businesses with high-speed document scanning as part of their wide-ranging abilities. Dedicated digital

Body No.: **FP300001** EAN128
N° de serié:
Gehäuse Nr.: 
N° de cuerupo: (21)FP300001

DR Technology: Image Processing

Folio mode

This scanner is able to scan documents larger than the feeder inlet using a special Folio scanning method.



Fold a document in half and scan using Folio mode.

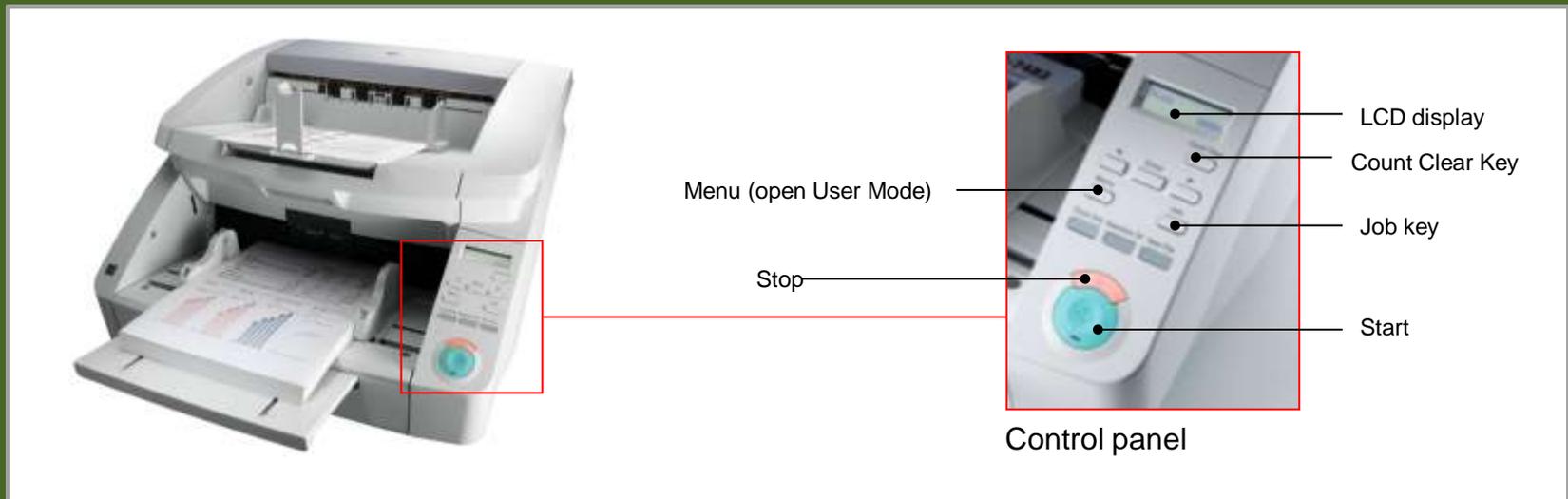


Both sides are scanned and automatically combined into one seamless image.

DR Technology: Operation

Convenient control panel for operator handling ease

The DR-G1130 and DR-G1100 feature an intuitive control panel that lets you start and stop scanning, select preregistered scan jobs, check displayed messages, and make select scanner settings straight from machine. The control panel's special menu for changing scanner settings is called User Mode.



DR Technology: Operation

Execute scan jobs directly from the control panel

The Job Function enables the operator to select and execute up to 99 preregistered scan jobs directly from the scanner's control panel without having to use a scanning application. Jobs—which consist of a set of scan settings, relevant image processing functions, image file format, and save destination*—are assigned using the included Job Registration Tool.



Color
mode

+

200dpi
resolution

+

LTR
Page size

Text
Orientation
Recognition

+

PDF
file format

+

Save to
[folder]
destination

Example of settings registered to a scan job

* Save to Folder only

DR Technology: Operation

High-volume feeder with three selectable positions

The home position of the motorized paper feed tray can be set to one of three heights according to the volume of a typical batch, which helps minimize the wait time before scanning begins. Each position accommodates up to approximately 100, 300, and 500 sheets, respectively.



Lowest position (500 sheets)



Middle position (300 sheets)



Highest position (100 sheets)

DR Technology: Operation

Flexible paper guides for easy edge-aligned scanning

The paper feed guides can be moved and locked into place independently to accommodate diverse document sizes and scanning positions. This allows easy edge-aligned scanning, handy for accurate scanning of mixed-size batches and when using the optional imprinter. The output guides, too, can be set freely to match.



Center aligned



Left aligned

The paper have to be placed where pickup roller could touch.

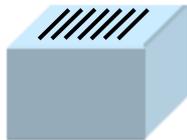
DR Technology: Operation

Verify Scan and Count Only modes confirm all pages are scanned

Verify Scan mode allows operators to confirm that all the pages in a batch are scanned by comparing a document hard count with the number of scanned pages. Count Only mode only feeds documents and performs a hard count of pages—the pages aren't scanned.

Verify Scan in action

500



499



R e a d y

0 0 0 0 0

V e r i f y i n g . . .

X X X X X

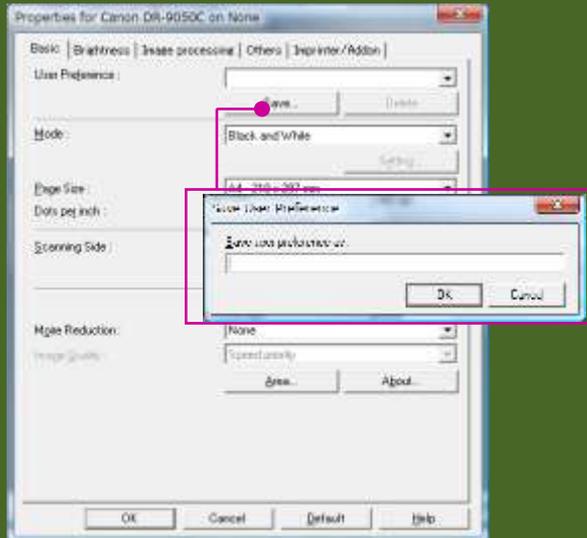
C o u n t M i s m a t c h

U 0 0 1

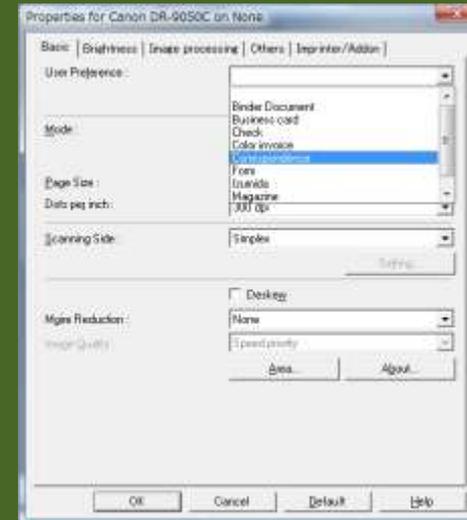
DR Technology: Operation

User Preferences for easy access to frequently used settings

Have different scanning requirements depending on the type of document you're scanning? As many as 100 sets of 'User Preferences' can be saved in a pull-down menu in the scanner settings dialog box.



Creating a User Preference
Adjust scanner settings according to document type and save the set as a User Preference

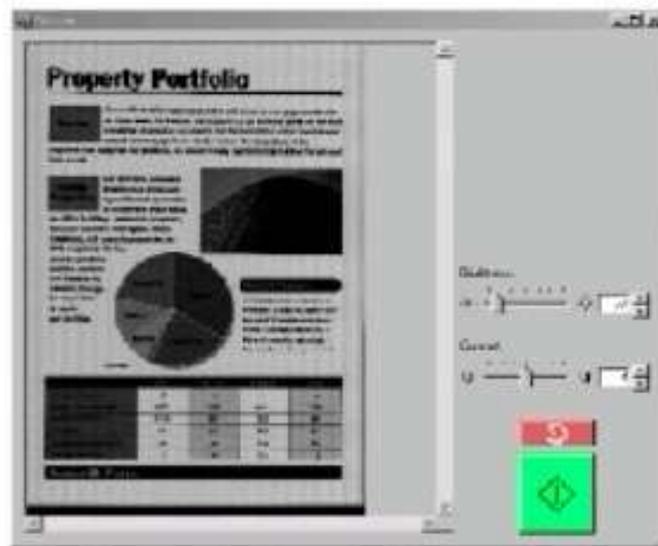


Selecting a User Preference
Once saved, all you have to do is click on a User Preference to set up the scanner for that particular type of document

DR Technology: Operation

Prescan

The Prescan function offers easier image adjustment with batches and eliminates the need for rescanning. All you have to do is scan the first page, adjust brightness and/or contrast as desired, press Start to continue scanning the rest of the batch, and you're done. Every subsequent page in the batch is scanned at the levels adjusted for page 1. There's also no need to rescan the first page.



DR Technology: Operation

Durable and easy maintenance

The DR-G1130/DR-G1100 features a solid body to handle the demands of production-level scanning. Its suggested daily volume are rated at 30,000/25,000 sheets per day*. To maintain optimal performance, it is recommended the scanner's rollers be replaced every 450,000 scans and the Separation Pad every 6,000,000 scans. A user-installable Exchange Roller Kit and Separation Pad (sold separately) are available for replacing worn rollers or pad—no service technician is required.

*According to internal Canon Electronics Inc. testing



Exchange Roller Kit
(Feed Roller, Retard Roller, and Pick Roller)



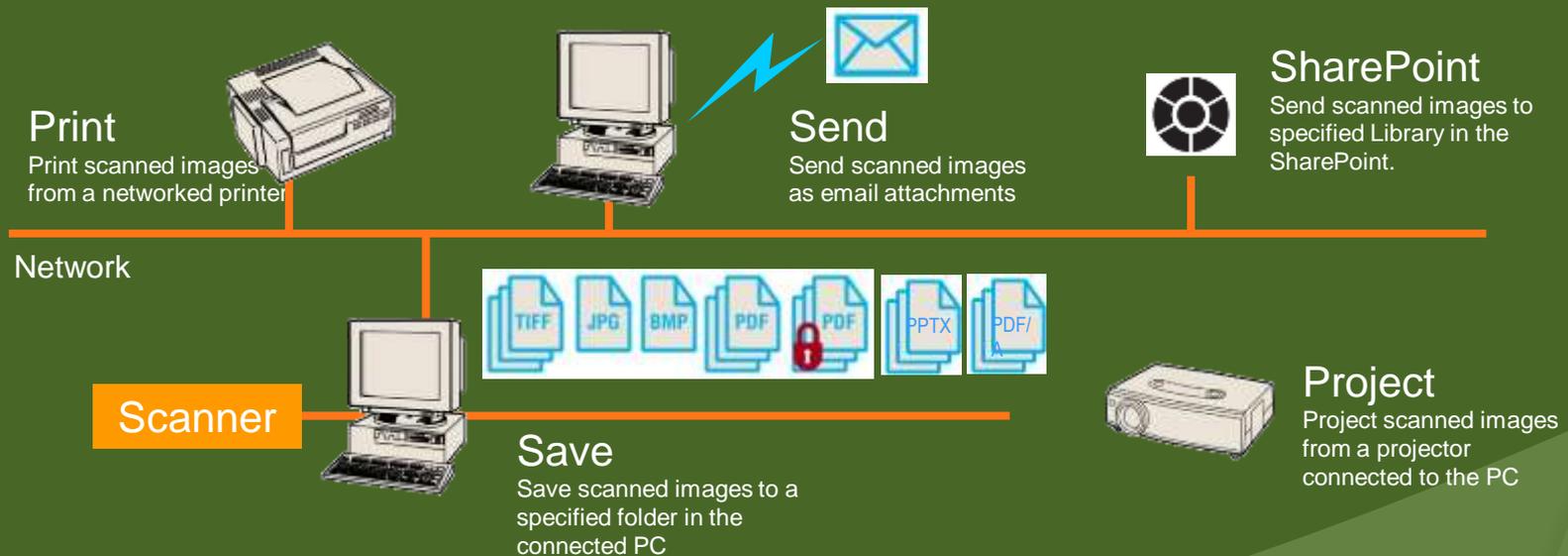
Separation Pad
(Retard Roller cover)



Durable construction and easy to maintain

Many functions for efficient scanning

CapturePerfect allows the user to turn virtually any document into a high-quality digital image. Through a convenient interface, the software features a variety of useful functions, such as batch scanning, Scan to Print, Scan to SharePoint Server, Scan to Mail, and even a function that lets you scan documents for direct display by a projector.



Edit and rearrange scanned files with ease

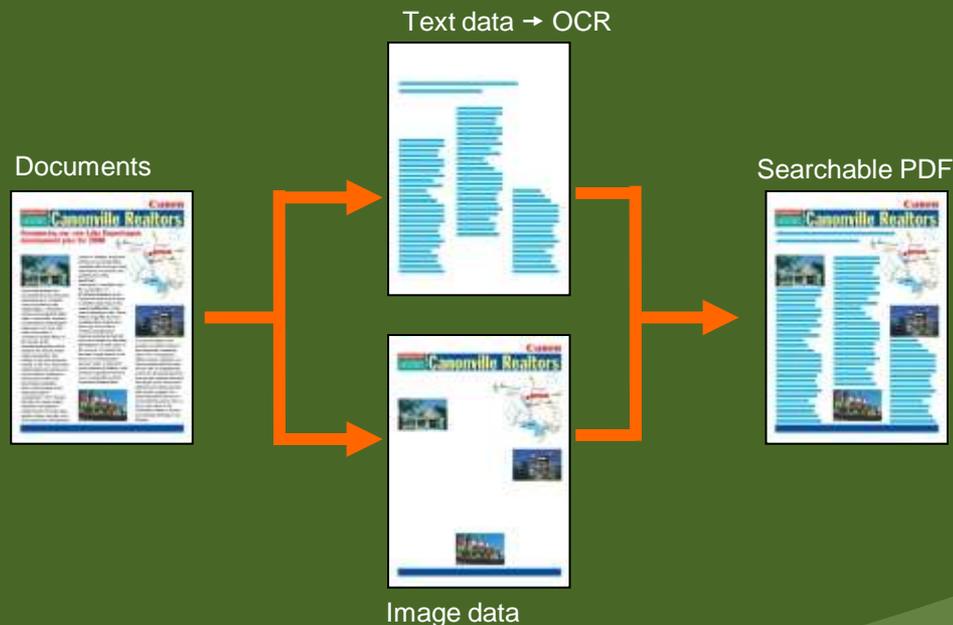
The user-friendly interface and convenient display functions make it easier than ever for you to view and manage your documents. CapturePerfect gives you the control to create multiple-page files and change the order of pages with drag-and-drop simplicity. You can add and insert pages from another file or from the scanner. With Thumbnail and Split View display options, it's extremely easy to confirm page order after editing your files.



Thumbnail and Split View

Create searchable PDF files

With CapturePerfect, you can save documents as searchable PDF files, in which text data extracted through OCR is embedded in the files. This allows you to search for specific words later on, and copy text data into other documents. And thanks to Canon's advanced high-compression PDF conversion technology, searchable PDFs are a fraction of the size of typical documents while maintaining high resolution and image quality.



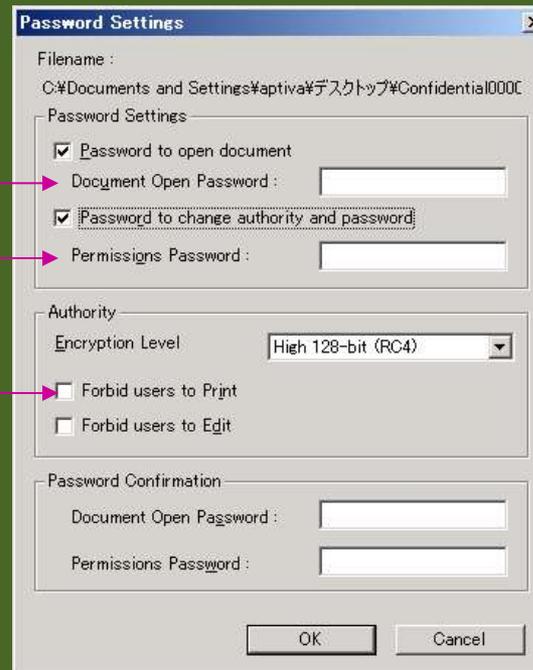
Password-protect your PDF files

CapturePerfect has a security feature that can encrypt scanned documents saved as PDF files. PDF Encryption ensures that only authorized individuals have access to your valuable data, allowing you to set a password to prevent people from editing, printing, or even opening your PDF files.

Document Open Password

Permissions Password
(Master Password)

Check to prevent users from printing or editing files



Password Settings dialog in CapturePerfect

Collaboration with SharePoint

Can send the file to the specified library (Folder) on the SharePoint Server. Can add the arbitrary index name for easy management.

To input the SharePoint account information.

To brows and select destination library(Folder).

Kofax VRS (Basic Version)

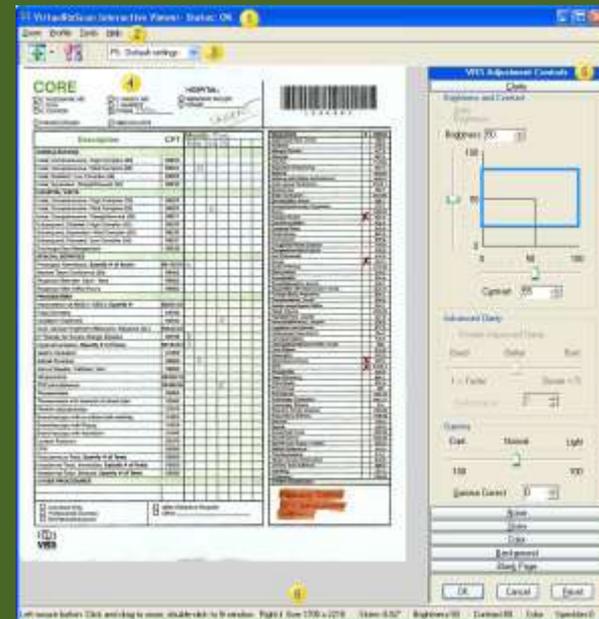


Imaging software for generating high-quality image data

Kofax VRS is software that, when used in conjunction with scanning applications, automatically applies appropriate image processing to the scanned documents, allowing for the highest-quality output.

The basic features of VRS include:

- Applies automatically the most suitable image processing for scanned images
- Automatic high-quality Deskew
- Removal of background noise and patterns
- Interactive image correction
- Barcode recognition engines

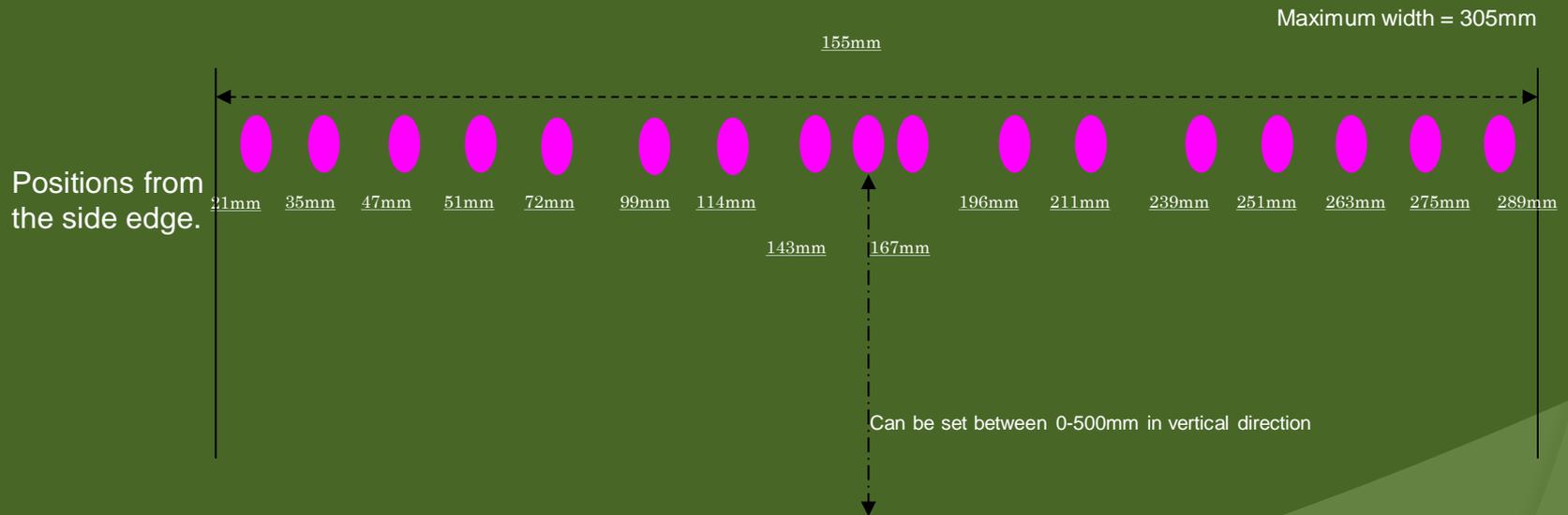


VRS Interactive Viewer

Options: Imprinter

Print up to 32 characters of text on the front side of documents as they are fed through the scanner with an optional built-in inkjet imprinter. You can print a fixed set of characters, the date, time, arrow symbols or any combination of the above. You can also set up a counter to create a unique I.D. number for each page of a document. Blue, red, or green ink colors are available.

The Imprinter can print at the following positions.



Options: Patchcode Detector

This hardware option enables the scanner to automatically separate files whenever a patchcode is detected on documents or function sheets.

Examples of patchcodes:



PATCH T (FILE
A)

Begin new batch,
including image
containing
patchcode



PATCH II (FILE B)

Begin new batch
following patchcode

*Support with the option board(by Service technicians)

Options: Barcode Module III

The barcode module is a software option that allows the ISIS/TWAIN driver to recognize scanned bar codes.



Reading result:

1234567890

4912345678904

4912345678904

Code-128

Barcode type & conditions

Code	Digits	Directions
EAN/JAN	8 or 13	0, 90 degree
CODABAR (NW-7)	3 – 32 (incl. Start/stop Character	0, 90, 180, 270 degree
CODE39	3 – 32 (incl. Start/stop Character	0, 90, 180, 270 degree
ITF	2 – 32 (even number only)	0, 90, 180, 270 degree
CODE128	1 – 32	0, 90 degree
UPC-A	13	0, 90 degree
UPC-E	8	0, 90 degree

Options: CapturePerfect SDK

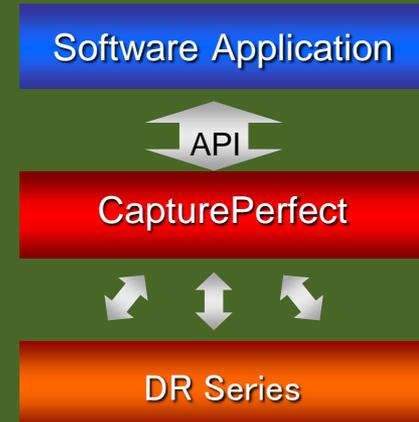


For easy integration of DR scanner functions into custom software applications

CapturePerfect SDK (Software Development Kit) is a set of tools that allows developers to integrate Canon DR scanner control into custom software applications via the CapturePerfect platform. Aimed at clients' in-house development teams and contractors, the SDK is cost effective, easy to use, and provides great flexibility for integrating DR scanners into existing business processes.

Benefits

- Easy integration of all DR scanner functions using minimal command sets—specialized knowledge of complex scanner controls is not necessary
- Once an API is developed, the host application is not only compatible with all current DR models but all future models as well
- Developers have the flexibility to either show the GUIs of CapturePerfect and scanner driver or have them run in the background



The host application is able to control the DR scanner(s) via CapturePerfect using a single API