

CUSTOM TEST REPORT

Extracted from the comprehensive field test evaluation

Roland DG TrueVIS LG-640

64-Inch Wide Format Printer
 CMYKReOrWW UV Ink



OUR TAKE

The TrueVIS LG-640 is Roland DG's new flagship UV roll-to-roll printer/cutter that delivers a wealth of new features including a new printhead and UV-LED lamp imaging system to raise productivity. Usability has been enhanced with a new seven-inch touchscreen, improved automated set up functionality, simplified maintenance procedures, and Roland DG Connect, a new cloud-based device management application. Available in 64-, 54-, and 30-inch widths, the device was launched simultaneously with the lower-cost MG-640, which retains more of the functionality from the original LEC2 series allowing for a more aggressive price point for cost conscious customers. The LG-640 offers a range of ink formulations with gamut expanding red and orange inks; white ink for transparent and colored substrate printing; gloss for varnish and embossed workflows; and primer for challenging media types. The gamut expansion configuration tested is designed to offer the highest levels of flexibility across creativity and productivity aided by the CMYK only print mode with both

white, and high-density white options. The operator has a high degree of control over the balance between quality and performance with our analysts determining that the 9-pass CMYK ink mode with high density white being the best balance, while the higher pass rate and gamut expansion ink options can be reserved for the most demanding, highest quality applications.

Walk-up ease of use is boosted by the new touchscreen which delivers fast processing of tasks such as device set up and media profile programming. Maintenance is relatively easy and the cloud-based Roland DG Connect includes a health check which will alert the operator when maintenance is overdue.

There is no doubt that Roland DG has raised the company's capabilities in the UV roll-to-roll market and that the LG series will be a formidable competitor.

★★★★☆

Image Quality

◆ Halftone Images	★★★★☆
◆ Color Accuracy	★★★★★
◆ Color Gamut	★★★★★
◆ Multi-Panel Wallpaper Consistency	★★★★★

★★★★☆

Image Quality (on Black Media)

(utilizing white ink under layer)

◆ Halftone Images	★★★★☆
◆ Color Accuracy	★★★★★
◆ Color Gamut	★★★★★

★★★★☆

Usability

◆ Media Handling	★★★★☆
◆ Device Management and Monitorin	★★★★★
◆ Maintenance and Ink	★★★★★

★★★★☆

Speed (without white layer)

★★★★☆

Speed (incorporating white ink layer)

FEBRUARY
 2023

BENEFITS

- Seven-inch touchscreen control panel aids walk-up device management functions such as device set up and media profile creation
- High yield 750 ml eco-friendly ink bag reduces cost of ownership
- Common platform as Roland DG's latest TrueVIS VG3 eco-solvent devices maintains continuity in multi-ink technology operations
- New larger staggered dual printhead design and UV-LED lamp enhances productivity in most workflow scenarios
- Excellent reproduction of skin tones on both white and black media, earning our top ratings
- Ability to print in CMYK and W only mode and CMYKReOr and W modes allows users to choose between maximum color space or maximum productivity when printing with white ink
- User friendly automated feed calibration and head gap adjustment functions aids less experienced operators
- Wide range of ink formulation options to tailor to customer environments
- Bundled VersaWorks 6 RIP removes need to invest in a third-party application, keeping investment costs down
- Improved media loading and take up aids with error free operation
- Perforated sheet cutting function and contour cutter reduce user intervention and save media
- Advanced functionality in VersaWorks 6 can limit pre-flight time requirements allowing for faster job submission while ensuring high quality results
- Simple to use Roland DG Connect cloud-based app provides quick oversight of device and health status from the desktop or from portable devices, plus alerts when issues arise

ADVANTAGES

- Excellent spot color performance earning a rare 5 star status with only one color above Delta E00 4.0, minimizing pre-flight delays on brand sensitive work
- VersaWorks 6 Nearest Color Finder and Variation Job Function offer fast, clear-cut color optimization
- Optimal image quality achieved at the high-speed print mode
- Perfectly neutral, photo-like greyscale output; very good light and dark contrasts and above average fine details
- Perforated sheet cutter option allows continuous feed printing mode to be operated while still providing simple sheet separation upon unloading
- Contour cutter enables non-printed borders around posters to be trimmed in line resulting in full bleed output
- Contour cutter allows printed layer of stickers, decals, and other shaped objects to be cut leaving the backing sheet intact for easy transportation and separation
- Minimal manual media feeding required when loading with vacuum hold and is automated to minimize risk of skew
- Easy and minimal maintenance required with fast access to the printhead and alert reminders

IMAGE QUALITY (on white media)



Halftone Image Reproduction	★★★★☆
Color Accuracy	★★★★★
Color Gamut	★★★★★
Multi-Panel Wallpaper Hanging	★★★★★

IMAGE QUALITY (on black media)



Halftone Image Reproduction	★★★★☆
Color Accuracy	★★★★★
Color Gamut	★★★★★

KEY FINDINGS

- Skin tones were rated as excellent across both monomeric and cast vinyl assessments. Greyscales are another standout characteristic earning an excellent rating at the highest quality on cast vinyl with very good levels of contrast in both light and dark areas and a neutral appearance.
- Printing on black vinyl with a white ink underlayer also delivered high quality results when using the high density white mode, with skin tones again being a standout. Memory colors earned very good scores as did light contrast, which again is a testament to the quality of the white under layer opacity.
- Very impressive color matching for a CMYK ink device with a mean accuracy result of Delta E00 2.08 in highest quality mode; and only one color (Cadbury Purple) exceeding the visible recognition threshold of Delta E00 4.0.
- Color matching benefitted greatly from the slower, high density white mode. While the most productive normal white mode delivered an average Delta E00 of 6.84 and 10 of the 12 colors exceeding the DeltaE00 4.0 threshold, in high density white mode, the Delta E00 average was significantly lower, 3.09, and only 3 colors exceeded Delta E00 4.0.
- An average 569,004 color gamut is larger than many devices tested and comparable to the gamut size of Roland DG's CMYK VG3 gamut expansion eco-solvent ink device.
- Color gamut on black media benefitted greatly by use of the high-density white mode, increasing gamut volume by more than 30% in CMYK mode and 35% in CMYKReOr mode.
- Excellent wallpaper results with a maximum of only 1.53 Delta E00 across the 54-patch media wedge, and a dimensional stability variance of only 0.33 mm over the metre length.

IMAGE QUALITY ON WHITE VINYL



Halftone Image Reproduction



Criteria	MPI 3000: Most Productive (High Speed)	MPI 1105: Most Productive (High Speed)	MPI 1105: Highest Quality (High Quality)
Greyscales	Very Good	Very Good	Excellent
Skin Tones	Excellent	Excellent	Excellent
Memory Colors	Good	Very Good	Very Good
Metallics / Pearlescent	Very Good	Very Good	Good
Light Contrasts	Very Good	Very Good	Very Good
Dark Contrasts	Very Good	Very Good	Very Good
Fine Detail	Very Good	Very Good	Very Good

To compare rival devices' halftone image reproduction results visit [bliQ WF](#)



Memory colors, fine detail



Fine detail, dark contrasts



Metallics, fine detail, pearlescent



Greyscales dark contrasts



Skin tones light contrasts



Fruits and vegetables

Memory colors, fine detail

Keypoint Intelligence's proprietary A0-size wide format test target that comprises six high quality color/black and white halftone images was printed at the most productive speed/quality setting that produced acceptable image quality without visible banding on both Avery Dennison MPI 3000 and MPI 1105 media. Each of the six images was cut from the larger target and visually appraised under standard lab lighting conditions for color accuracy, brightness, sharpness and contrast by two KPI technicians independently. Print samples on the MPI 3000 (monomeric vinyl) were evaluated at a distance of 10 feet (reflecting a walk-/drive-by viewing experience) and those printed on the MPI 1105 (Cast vinyl) were evaluated at a closer distance of two feet (reflecting a close-up viewing experience). Once completed, the individual appraisals were combined and a final image quality score was assigned. In the event of differing scores, the sample's quality was debated and a final consensus attained.

▲ PANTONE CORPORATE COLOR ACCURACY



Avery Dennison MPI 1105: Most Productive (High Speed)

PANTONE Color	165 C Home Depot	2685 C Cadbury	285 C Walmart	123 C McDonalds	485 C Coca Cola	321 C Siemens	293 C IKEA	109 C IKEA
ΔE00	2.56	7.80	3.22	0.65	0.82	1.21	3.85	0.63
PANTONE Color	137 C Veuve Cliquot	279 C Microsoft	574 C Harrods	361 C FedEx	476 C UPS	RHOD RED C Mobile	294 C Ford	Average ΔE00
1.56ΔE00	1.41	3.63	1.03	0.98	1.78	3.26	3.10	2.40

Avery Dennison MPI 1105: Highest Quality (High Quality)

PANTONE Color	165 C Home Depot	2685 C Cadbury	285 C Walmart	123 C McDonalds	485 C Coca Cola	321 C Siemens	293 C IKEA	109 C IKEA
ΔE00	3.04	4.71	2.86	1.01	0.89	1.36	2.78	0.48
PANTONE Color	137 C Veuve Cliquot	279 C Microsoft	574 C Harrods	361 C FedEx	476 C UPS	RHOD RED C Mobile	294 C Ford	Average ΔE00
ΔE00	1.36	3.42	2.54	0.41	1.89	3.06	1.46	2.08

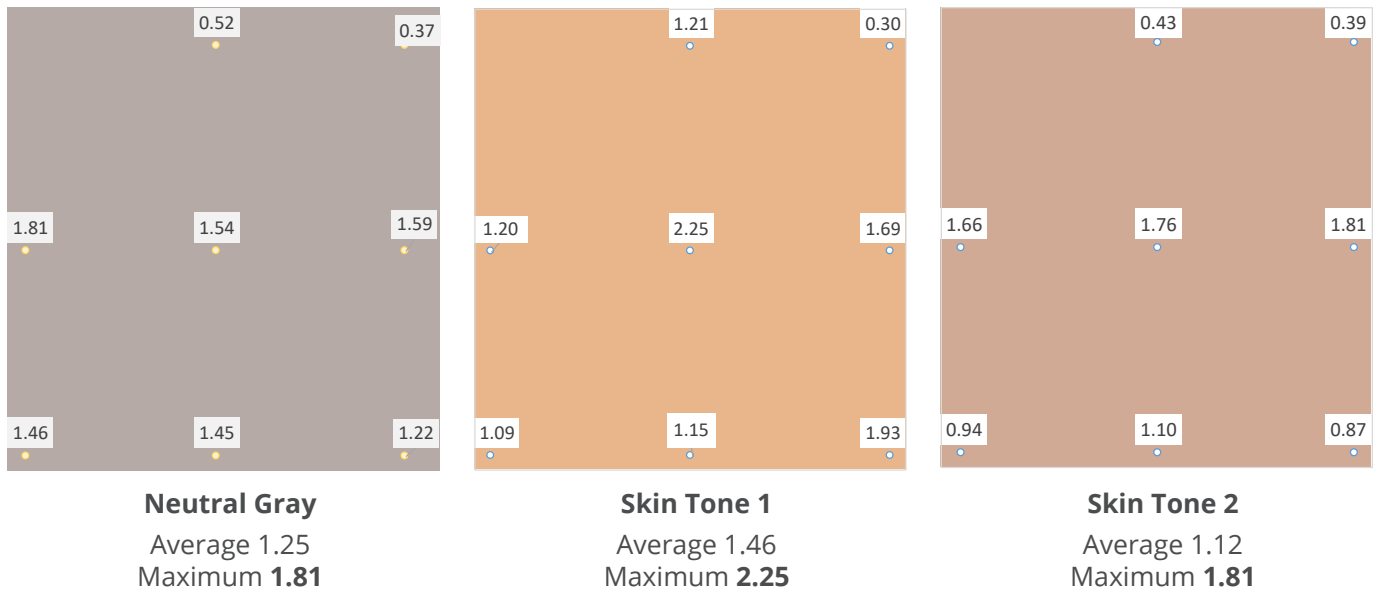
The KPI target is printed on the Avery Dennison Cast Vinyl MPI 1105 media using the vendor supplied media profiles at the most productive speed setting (no banding visible at two feet viewing distance) and the highest quality mode. Spot color management is enabled in the DFE but no color replacements/spot color editing is permitted. Note: All DFEs will have additional spot color adjustment capabilities allowing the printer to get closer to the PANTONE targets with extra operator time and effort.

COLOR CONSISTENCY

MPI 3000: High Speed					
	Top Left	Top Right	Bottom Left	Bottom Right	Maximum Density Difference
CYAN	1.73	1.72	1.75	1.69	0.06
MAGENTA	1.46	1.45	1.46	1.5	0.16
YELLOW	1.08	1.07	1.09	1.08	0.01
BLACK	1.82	1.85	1.88	1.87	0.06
MPI 1105: High Speed					
CYAN	1.79	1.78	1.82	1.8	0.04
MAGENTA	1.46	1.47	1.5	1.48	0.04
YELLOW	1.08	1.09	1.08	1.08	0.01
BLACK	1.81	1.78	1.76	1.77	0.05
MPI 1105: High Quality					
CYAN	1.72	1.76	1.76	1.77	0.05
MAGENTA	1.64	1.61	1.66	1.63	0.05
YELLOW	1.13	1.14	1.17	1.14	0.04
BLACK	1.66	1.77	1.77	1.76	0.11

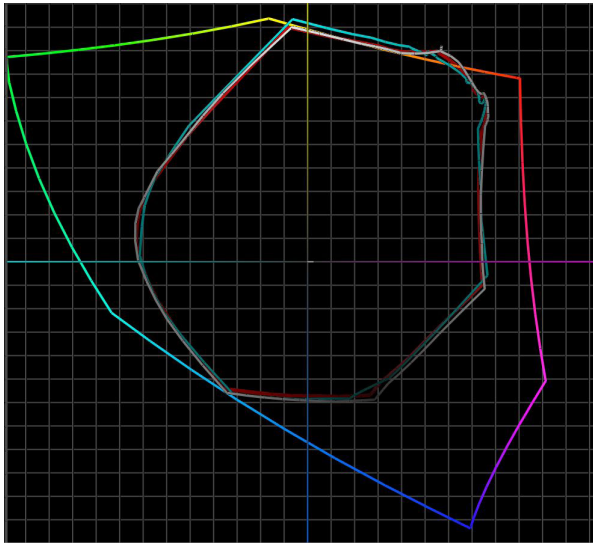
CMYK solid density measurements are recorded from the four corners of KPI's A0 target chart using a calibrated XRite eXact spectrophotometer. Results are obtained on the Avery Dennison MPI 1105 Cast Vinyl media at the most productive and highest quality mode, and on the Avery Dennison MPI 3000 Monomeric Vinyl at the most productive mode.

Color Consistency – Delta E00 Across Page



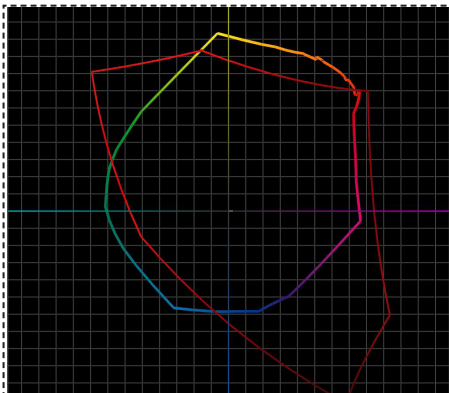
Three KPI A0 targets with 100% coverage of two skin tone shades and a neutral grey were printed on the Avery Dennison Cast Vinyl MPI 1105 media at the most productive speed setting. Color consistency across the sheets were assessed by comparing the top left corner against eight other locations using an Xrite eXact spectrophotometer.

▲ COLOR GAMUT

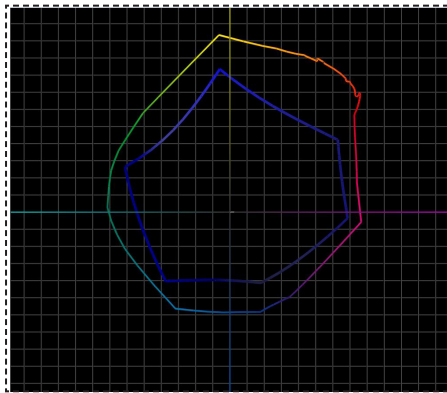


Media: Setting	Graphic Color Representation	Color Gamut (CIE) Volume
Avery Dennison MPI 3000: Most Productive	White	575,628
Avery Dennison MPI 1105: Most Productive	Cyan	543,253
Avery Dennison MPI 1105: Highest Quality	Red	588,131

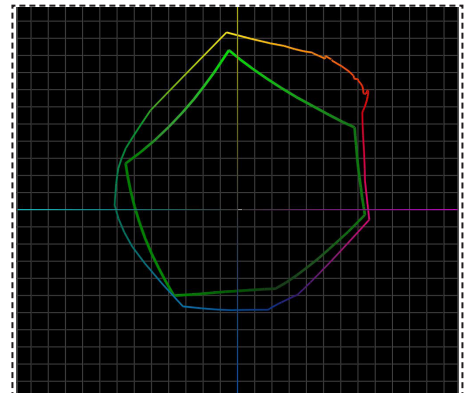
Compared against Adobe RGB(1998) color space (multi-color graph)



Chromic - HQ Cast Vinyl
Red - sRGB



Chromic - HQ Cast Vinyl
Blue - US SWOP



Chromic - Chromic HQ Cast Vinyl
Green - FOGRA39 Coated

To compare rival devices' color gamut sizes visit bliq.wf

Color Gamut Analysis

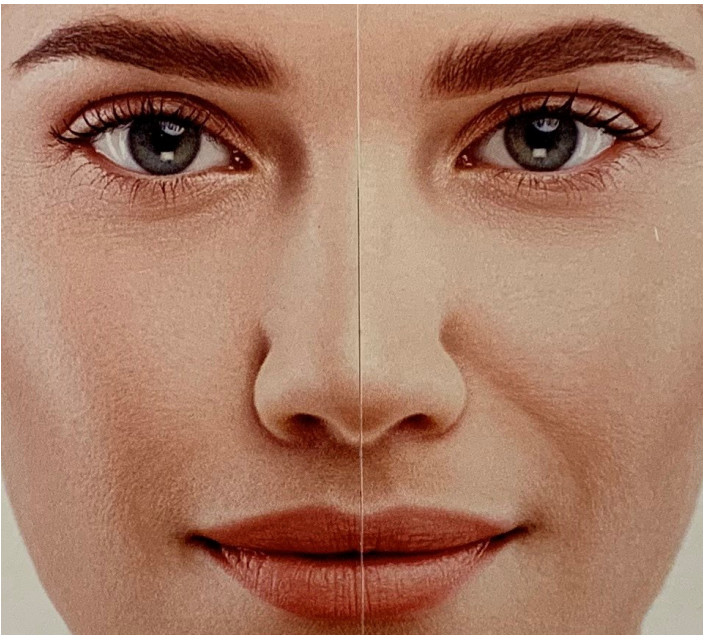
The media profiles provided by the vendor were assessed using Chromix ColorThink software to determine the cubic L*a*b* units color gamut volume measurements.

▲ MULTI-PANEL WALLPAPER CHART: COLOR AND LINE CONSISTENCY



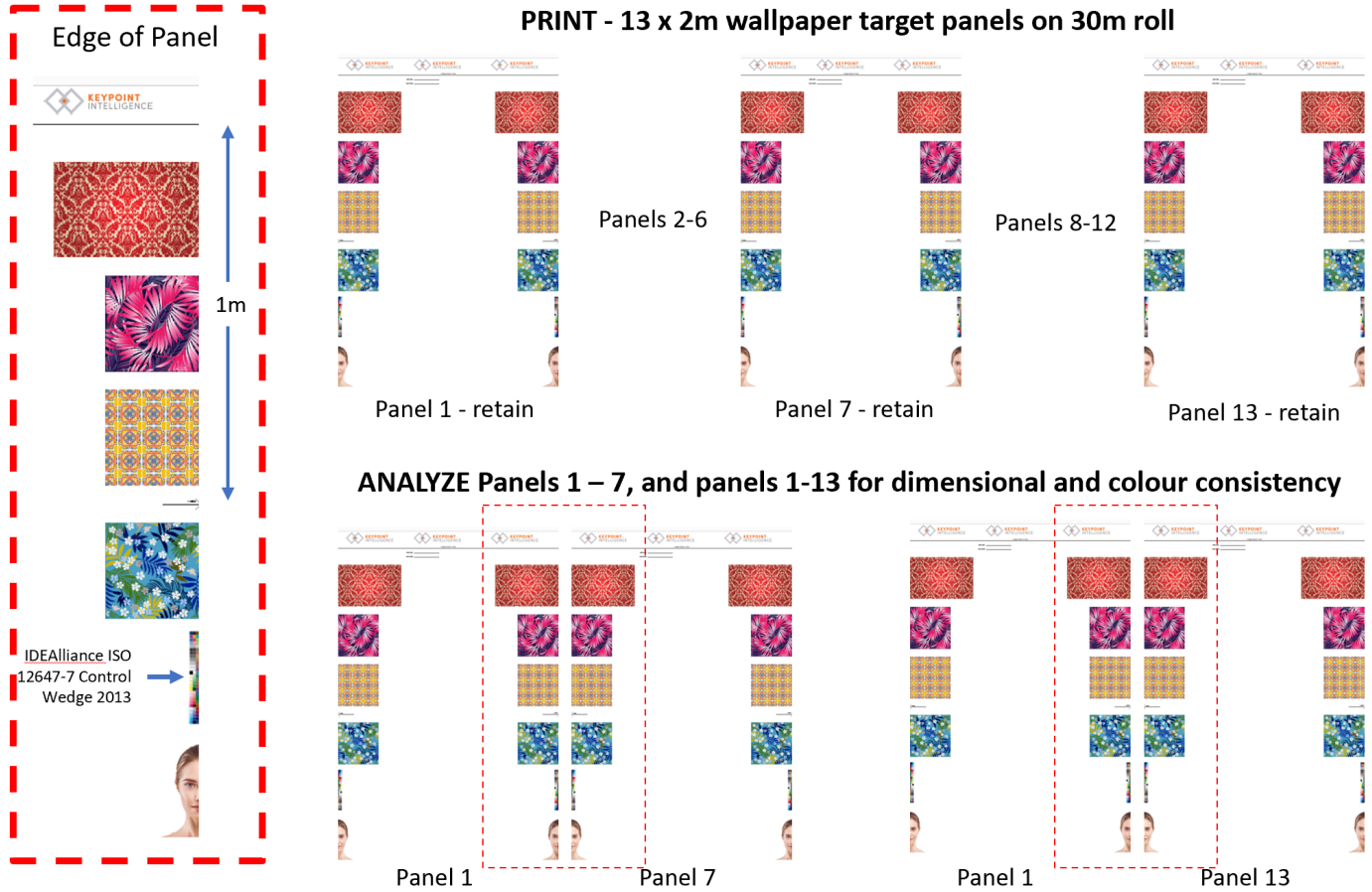
	Start to middle	Start to end
Mean Delta E over FOGRA wedge in DeltaE00	0.65	0.68
Max Delta E over FOGRA wedge in Delta E00	1.53	1.40
Dimensional Accuracy (in mm)	0.00	0.33

To compare rival device halftone reproduction results visit bliQ WF



High resolution images showing dimensional and color consistency of wallpaper panels from beginning of the roll – panel 1 (left side) to end of roll – panel 13 (right)

WALLPAPER TEST ANALYSIS



Wallpaper Test Analysis

To assess the consistency of output when producing wall-hanging or other multi-panel artwork, Keypoint Intelligence printed a 2m test target over a series of 13 sets on a 30m Drytac CCIP – Color Capture Paper Fleece Ivory media. Delta E variances across the 54 patch IDEAlliance ISO 12647-7 Control Wedge 2013 were recorded comparing the first panel off the roll versus the middle of the roll and the end of the roll using EFI Color Verifier software. Dimensional stability is recorded using a one metre target distance marker.

▲ IMAGE QUALITY ON BLACK VINYL (UTILIZING WHITE INK UNDER LAYER)



Halftone Image Reproduction ★★★★☆

Criteria	Drytac Chalkmate: Most Productive (9 pass CMYK HD white)	Drytac Chalkmate: Highest Quality (16 pass CMYKOrRe HD white)
Greyscales	Very Good	Very Good
Skin Tones	Very Good	Excellent
Memory Colors	Very Good	Very Good
Metallics / Pearlescent	Good	Very Good
Light Contrasts	Very Good	Very Good
Dark Contrasts	Good	Good
Fine Detail	Good	Very Good

To compare rival devices' halftone image reproduction results visit [bliQ WF](https://www.bliq.wf)

▲ PANTONE CORPORATE COLOR ACCURACY



Drytac Chalkmate: Most Productive (9 pass CMYK HD white)

PANTONE Color	165 C Home Depot	2685 C Cadbury	285 C Walmart	123 C McDonalds	485 C Coca Cola	321 C Siemens	293 C IKEA	109 C IKEA
$\Delta E00$	9.65	7.72	3.75	9.08	4.37	1.48	3.07	7.66
PANTONE Color	137 C Veuve Cliquot	279 C Microsoft	574 C Harrods	361 C FedEx	476 C UPS	RHOD RED C Mobile	294 C Ford	Average $\Delta E00$
$\Delta E00$	9.03	4.77	1.71	2.09	1.29	5.37	1.87	4.79

Drytac Chalkmate: Highest Quality (16 pass CMYKOrRe HD white)

PANTONE Color	165 C Home Depot	2685 C Cadbury	285 C Walmart	123 C McDonalds	485 C Coca Cola	321 C Siemens	293 C IKEA	109 C IKEA
$\Delta E00$	5.91	4.87	3.88	3.57	0.53	1.26	2.62	3.76
PANTONE Color	137 C Veuve Cliquot	279 C Microsoft	574 C Harrods	361 C FedEx	476 C UPS	RHOD RED C Mobile	294 C Ford	Average $\Delta E00$
$\Delta E00$	3.45	4.26	2.58	1.03	1.58	4.75	2.32	3.09

▲ COLOR GAMUT (ON BLACK VINYL MEDIA)



Media: Setting	Graphic Color Representation	Color Gamut (CIE) Volume
Drytac Chalkmate: Most Productive 9 pass CMYK HD white	White	376,873
Drytac Chalkmate: Highest Quality 16 pass CMYKOrRe HD white	Red	493,103

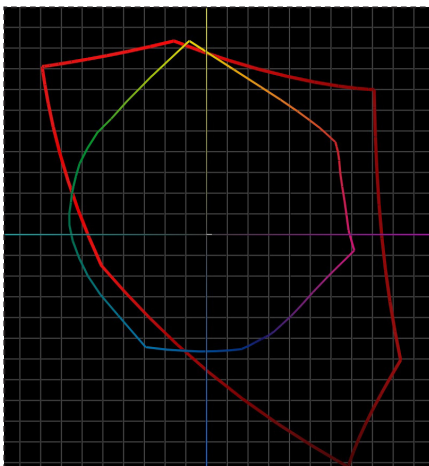
To compare rival devices' color gamut sizes visit bliQ WF



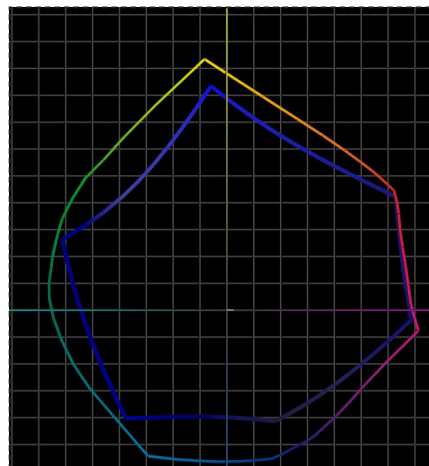
Compared against Adobe RGB



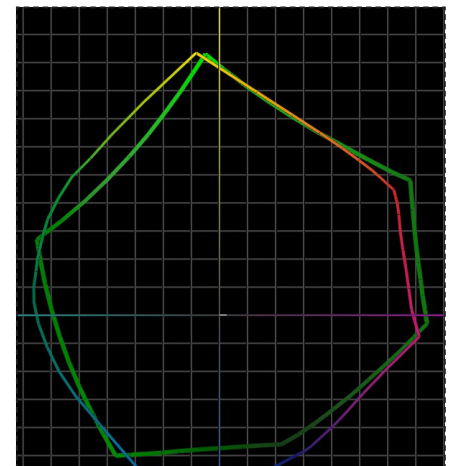
Chromic white vinyl, black vinyl



Chromic HQ Black Vinyl, Red sRGB



Chromic HQ Black Vinyl, Blue US SWOP



Chromic HQ Black Vinyl, Green FOGRA39

Color Gamut Analysis

The media profiles provided by the vendor were assessed using Chromix ColorThink software to determine the cubic L*a*b* units color gamut volume measurements.

▲ USABILITY



Media Handling	★★★★☆
Device Management and Monitoring	★★★★☆
Maintenance and Ink	★★★★☆

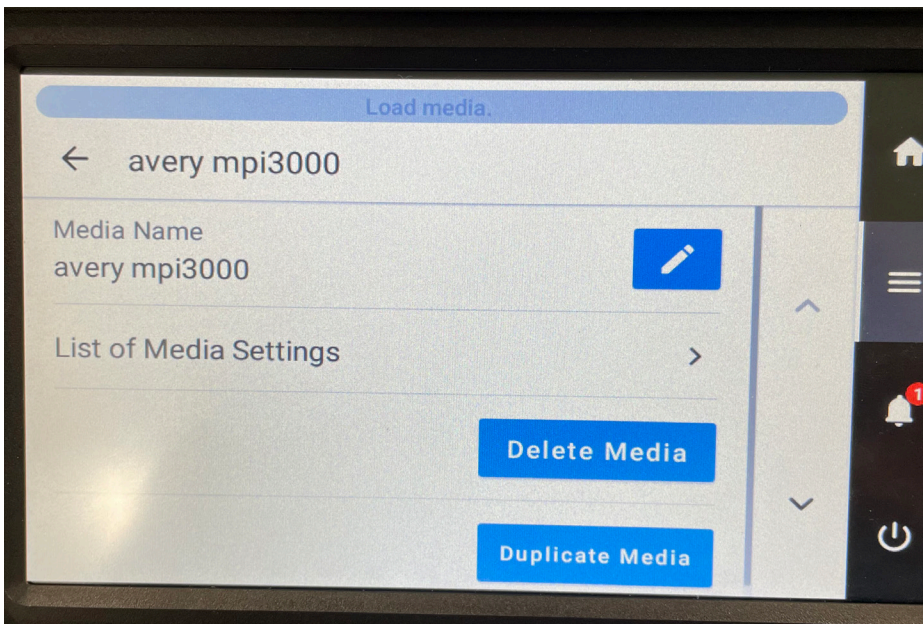
KEY FINDINGS

- Spindle-less media loading, vacuum hold and feed mechanism, and a new strengthened take up system all combine to minimize manual feeding distance and reduce the risk of skewing while improving take up.
- Up to 20 media profiles can be stored on the device. Entering the media details is easy owing to the large touchscreen control panel. The unit features a media remaining function, a process by which the media length is entered upon loading and then the remaining length is printed on the partial roll's edge before unloading.
- The seven-inch touchscreen provides valuable information and offers one touch access to key elements of device management.
- The VersaWorks 6 RIP can drive up to four devices per PC. The feature-rich solution is intuitive for conducting all operations and minimizes training time for new users.
- Class-leading spot color management with automated 'Nearest Color Finder' which allows the operator to print a selection of patches with minor color balance variations. These can be read by a spectrophotometer within VersaWorks 6, and the best possible color match is determined automatically.
- Roland DG Connect cloud application allows desktop and mobile users to monitor device/fleet status, conduct firmware updates, cost up jobs, and track health status.
- Disposable 750-ml ink bags are loaded in reusable hard plastic casings minimizing waste. Replacement is straightforward with the operator simply sliding open the casing and inserting a new ink bag. Maintenance fluid is contained in a cartridge that is easily replaced to the right of the device.
- Routine maintenance is limited to an about weekly wipe around the printhead to remove excess buildup. The process takes circa five minutes and does not require any tools, in access to the printhead.

MEDIA HANDLING



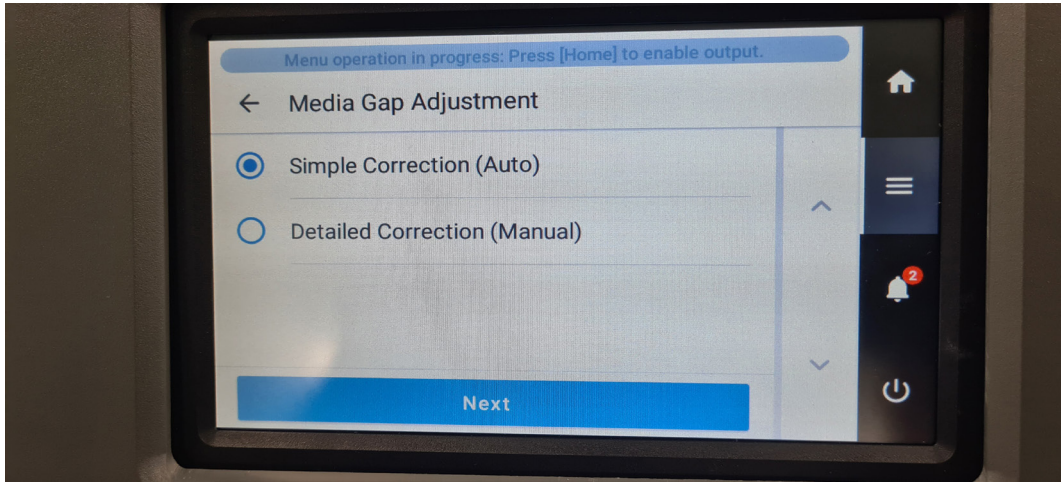
- Media is loaded onto flanges which are mounted on the feed bar with a sliding mechanism. Two concave plates allow the media to be rested on safely while the flanges are attached. When the flanges are attached and pushed firmly in place, the flange locking bars are raised preventing any sideways movement. The user lifts the pressure release lever at the front and the back of the device which raises the pinch rollers to allow the media to be fed through to the front of the device. An audible double beep signals when sufficient media has been fed through and the vacuum fan automatically activates, holding the media in place. The user can then rewind the media using the flanges from the feed roller to take up the slack. This process reduces the risk of skewing when feeding by reducing the distance of manual media feed that is required.
- The pinch rollers are mounted on a bar and can be repositioned by sliding along the bar, if required. The pressure lever is then depressed to engage the feed rollers. The sensor moves across the media which verifies the width.
- The two media edge clamps slide in from the sides to hold the media flat and do need to be removed before cutting can commence.
- Up to twenty media profiles can be stored on the system for reuse. Each profile includes various media adjustment characteristics, including feed calibration and head gap.



Media profile being created using the large touchscreen

- The device has a media remaining feature which allows the operator to specify the media length on the roll during installation and/or removal.
- The feed calibration and head gap adjust settings, which use a sensor to read specific patterns and register the results, can be conducted automatically. A manual mode allows target patches to be printed and visually assessed to determine the optimal settings that are then entered at the control panel. The manual head gap adjustment can be conducted in either simple or detailed mode. In simple mode, multiple droplet sizes

are used to print single test pattern thread to determine the optimal head gap. In detailed mode, four different drop size targets are printed with the operator choosing the optimal setting for each droplet size.



User choosing the auto or manual media gap set up process

- The difference in time to complete the automatic setting tasks versus the manual route are largely equivalent, with the major benefit being that the automatic choice reduces the skill requirement of the operator and enables the process to be conducted while the operator is carrying out another task.
- The media holder is quite high up on the device reducing the amount of waste at the end of a roll versus some devices which have the media rolls positioned lower to the ground.
- Up to twenty media types can be classified for the device and are easily set up on the control panel.
- When a new media is added, the user is taken through a list of optimization settings including media output type (print/print&cut, cut only), print head height (low/med/high), nozzle drop out test & cleaning, and media adjustment method (auto or manual).
- The device can accommodate media rolls up to 45 kg which is competitive in this market.
- The take-up system comes as standard. Affixing media to the take-up reel is a straightforward process. Media can be attached to the take-up unit during printing rather than having to be connected to the unit before printing can commence reducing waste. The left- and right-side core attachments are adjustable.
- The take-up system has a manual toggle button for forward or backward feed. The touchscreen panel also includes a feed control option, plus it is used to set up the feed mode (tension or loose) and auto feed mode (forward or backward) to allow for image inside or outside take-up.
- The sheet cutter can be set to perform a complete cut (separating the sheet) or a perforated cut, where the sheet is not totally separated and remains intact. This allows for continuous printing onto the take up roll but enables easy separation upon unrolling. The perforated selection can save media versus cutting each sheet individually.
- An integrated contour cutter allows for cutting around the printed image shape. This can be a simple cut to create a full bleed image through to cutting out specific shapes. The contour cutter can be set to a perforated cut which cuts through both the vinyl and the backing or a standard cut, which only cuts through the vinyl layer and not the backing sheet to allow for each peel of release.



Individual images being contour cut

▲ DEVICE MANAGEMENT AND MONITORING

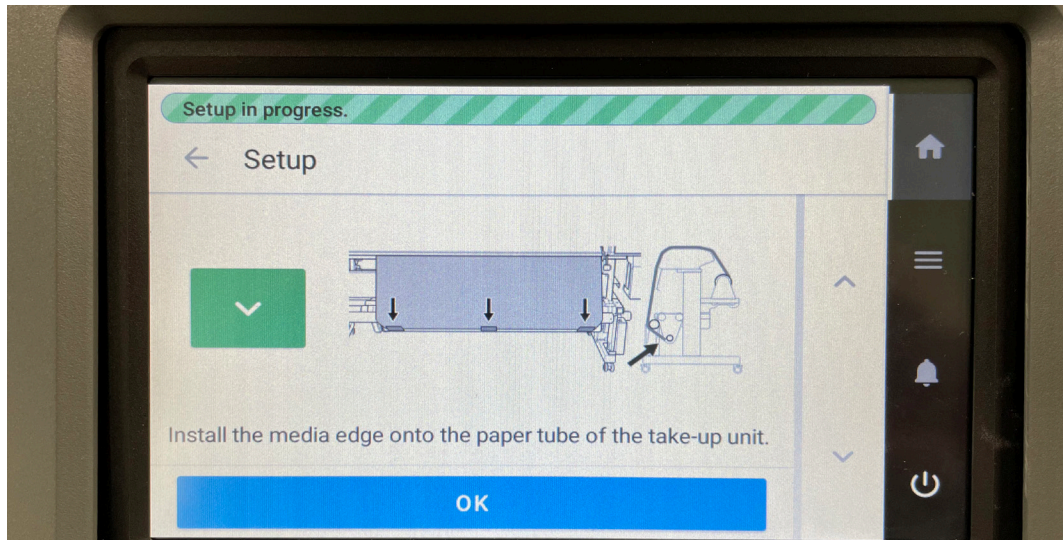


- The display control panel is a seven-inch touch screen. Navigation around the menu system is intuitive with many of the key features accessible from the home page including media name, width and remaining length, ink levels, heater temperature, and take-up unit settings. The home screen features icons that direct the operator to nozzle drop out tests (including cleaning routines), contour blade adjustment, move media (forward, backward, printhead start position), and sheet cutting (perforated or full sheet).



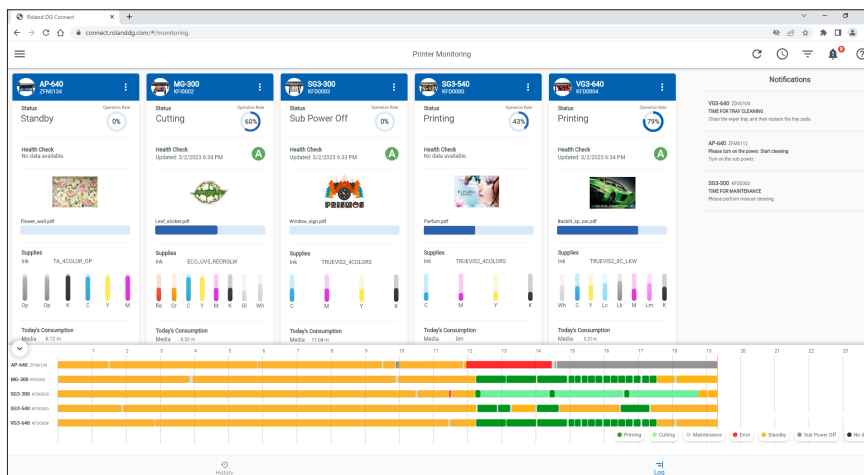
large touchscreen panel

- The control panel also includes useful aids to operation accessed via the Menu icon.



Clear instructions for media loading

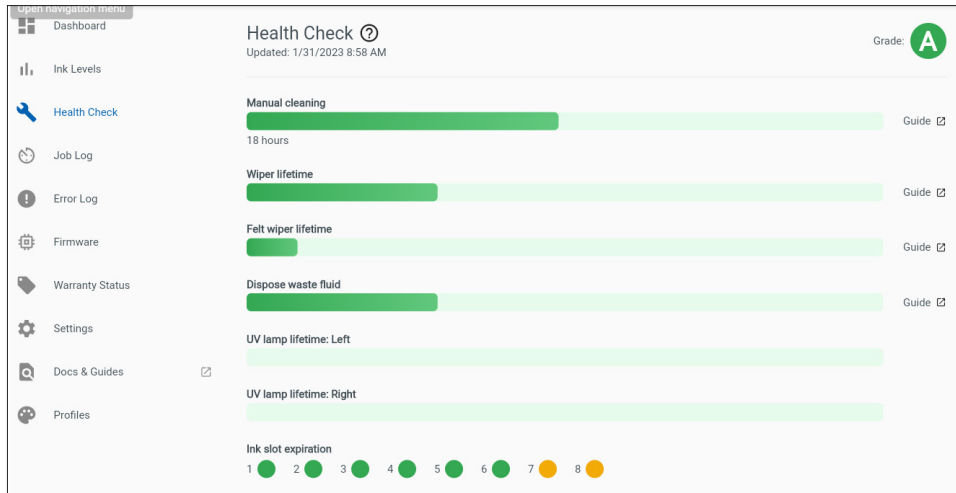
- When the device is printing a job, extensive information is displayed on the panel including job name, a convenient thumbnail image, the media in use, ink, temperature, and take-up status, and the approximate time to print completion.
- Free of charge, Roland DG Connect utility enables monitoring of an unlimited number of registered networked devices. This cloud-based utility can be installed and accessed via PC or mobile devices.
- Printer Monitoring function enables viewing of printer status, operation rate, health check, job thumbnail, job name, job progress bar, remaining inks, total ink consumption, and operating history within the day with bar charts for each connected device.



Roland's DG Connect Printer Monitoring

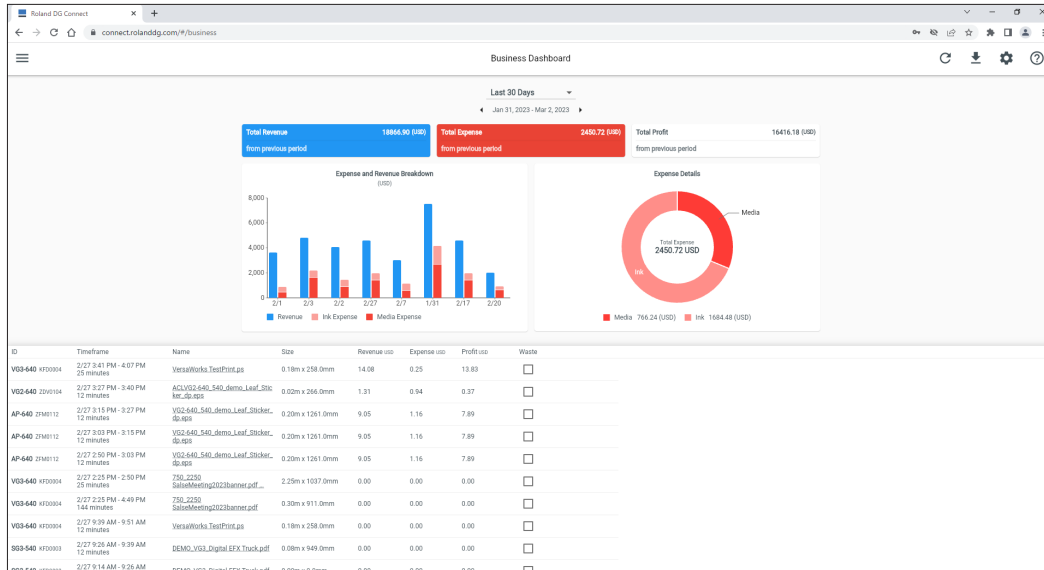
- Within the utility, the operator can view a breakdown of device status over time including printing, cutting, maintenance, error, standby, and sub power off operations, all provided in a simple pie chart format.

- A health check window provides a fleet level view of current device health, graded A to C. An A rating indicates the device is in full working order. A device in an error state, past its manual maintenance scheduled time or with parts/supplies beyond life are classified as C, while B classification indicates a device is soon approaching C status if not attended to.



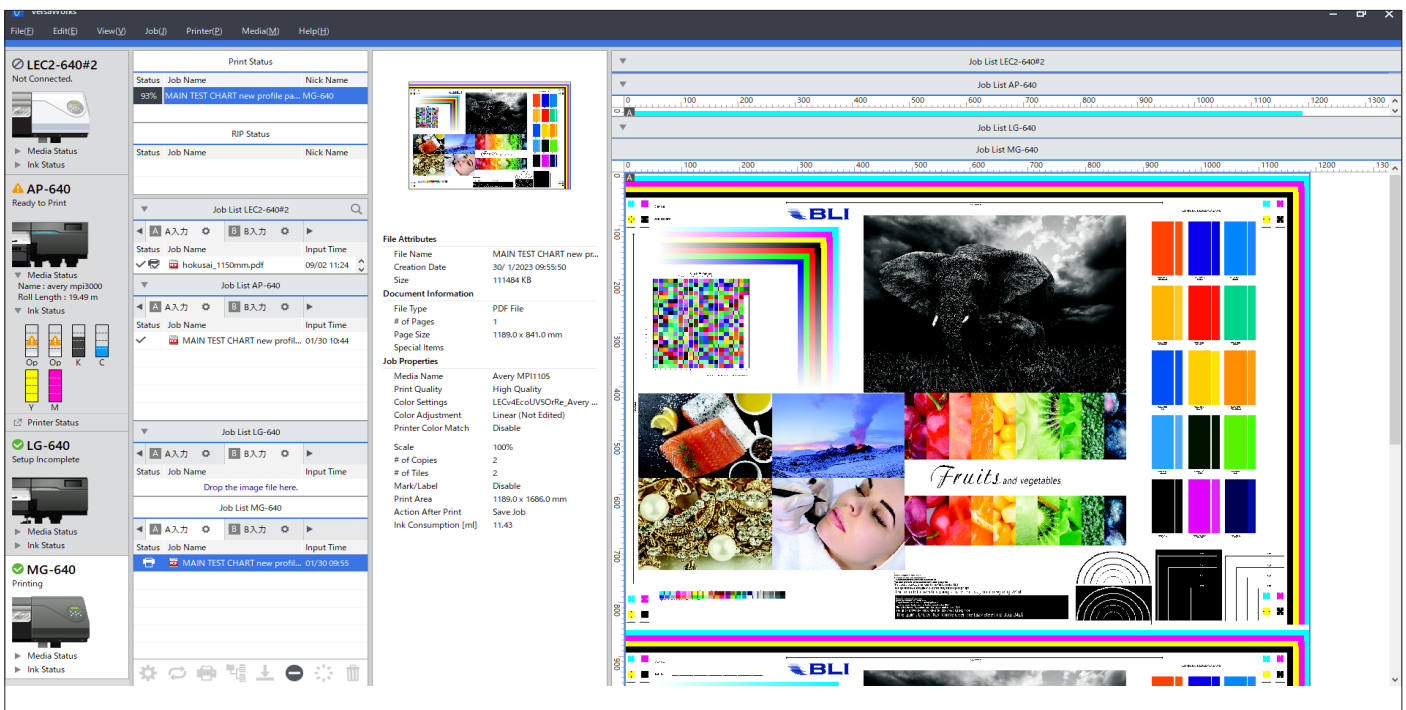
Roland DG Connect Health Check Screen

- To ensure that device health issues are detected immediately, an unlimited number of email addresses can be entered in Account Settings.
- The email alert system can also be set to inform the recipient when jobs have finished, when inks have been replaced, and other device status changes. However, there is no ability to fine tune what type of alert go to which recipients.
- Job accounting can be configured within Roland DG Connect Business Dashboard. Media roll and ink cartridge costs can be stored, allowing for individual job pricing to be generated. In addition, the utility offers a breakdown for total revenue, expense and profit (job pricing covers supplies costs only) over any customized period.



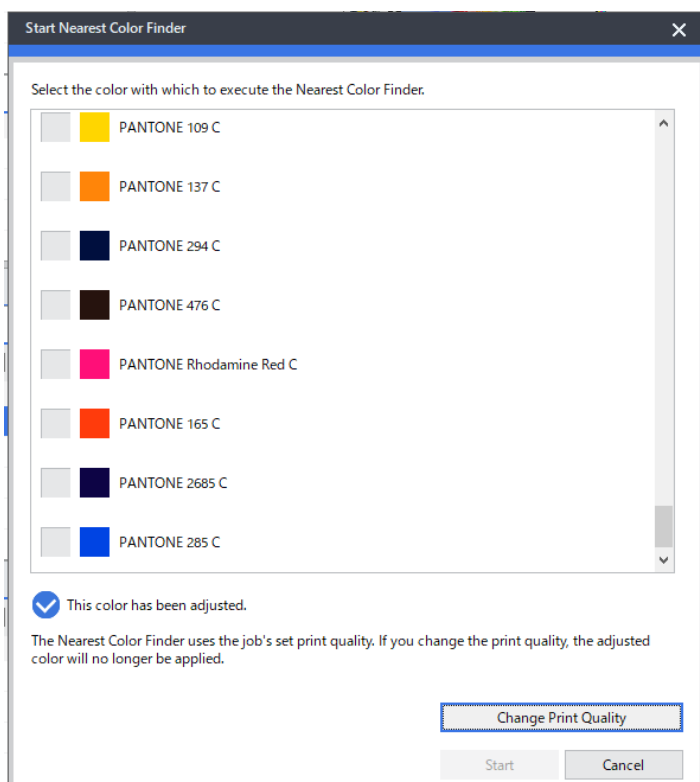
The Business Dashboard

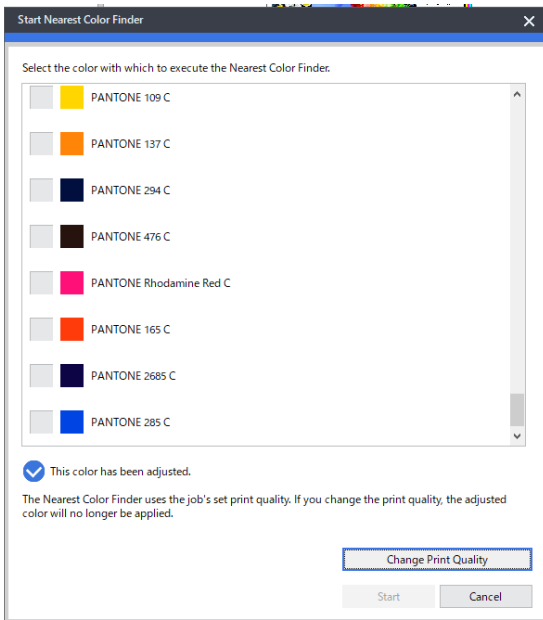
- Roland DG Connect enables the easy download of media profiles that can be filtered by RIP type and media manufacturer. Each file includes setting ink limit, tone curve calibration, and the ICC profile. The VersaWorks media explorer enables the same operations.
- VersaWorks 6 RIP offers intuitive operation for up to four network connected printers per one PC. The RIP is well designed, divided into four quadrants that include the printer list, job list, granular file information, and a large image thumbnail.



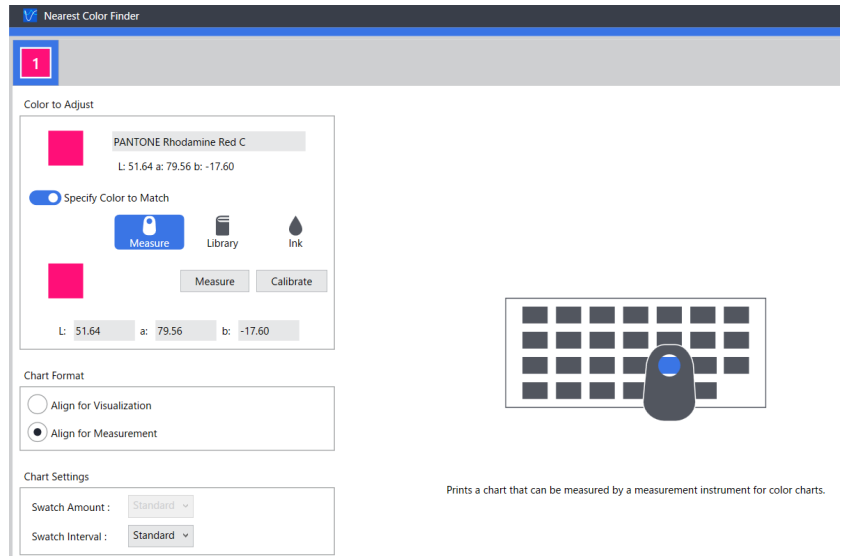
Roland VersaWorks 6 Main Screen

- Each device has up to five active customizable queues into which jobs can be dropped or imported. These act like a hot folder and allow for specific, frequently used workflows to be reused quickly without risk of deviation. The queue can have all job ticket information stored for immediate association, including media type, color management settings, job size, and formatting, nesting/tiling layout, print and cut marks, etc. Each queue can be named for easy identification. Additional queues can be stored and swapped for a current queue when required.
- The queue can be set to RIP and send directly to the printer or be held in the queue pending release by the operator. This allows for individual jobs to have settings adjusted if required before they are RIPped and then released to print.
- VersaWorks 6 includes a wide array of Roland, DIC, Toyo, and PANTONE color libraries. New user-customizable color libraries can be created with color information entered either through direct Lab/CMYK/RGB data entry or via a spectrophotometer manual scan. In the event of a manual spectrophotometer scan, VersaWorks 6 will then determine the optimal color settings to achieve this color.
- When spot color replacement is required to get the best possible match, VersaWorks 6 delivers a class-leading solution called Nearest Color Finder. Most RIPs allow for the printing of a selection of patches with slight modifications to the color makeup. The operator is then required to conduct the manual process of assessing which patch is the best fit whether through visual comparison to a PANTONE swatch book or through use of a spectrophotometer. VersaWorks goes one step further enabling the process to be conducted using a spectrophotometer, table or handheld, with the optimal color balance selected and stored automatically, a real time saver.



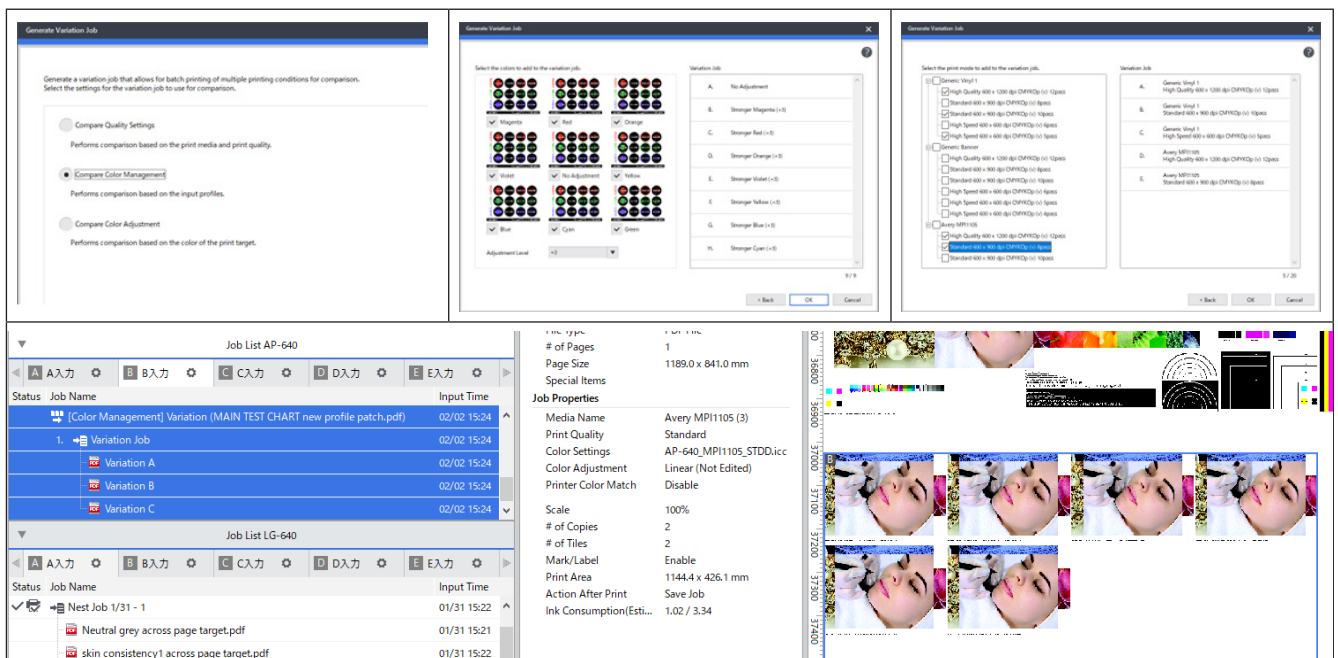


Nearest Color Finder pic 1



Nearest Color Finder Pic 2

- Another valuable time saving feature of the VersaWorks 6 RIP is its Variation Job Function, which enables tiling of printed samples using a selection of different profiles and/or different color management settings. The printed output can then be quickly assessed by the operator to allow for the best selection to be implemented.



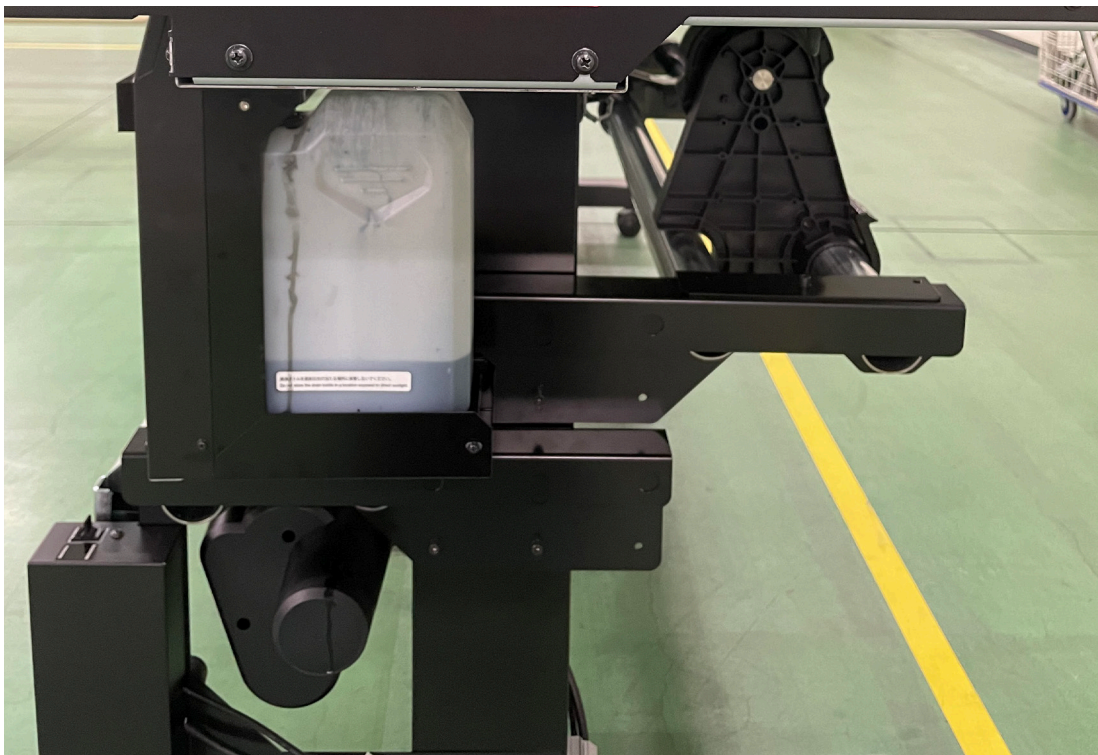
MAINTENANCE AND INK



- The LG-640 comes with Roland DG EUV5 Eco-UV ink in 750 ml cartridges which are loaded on top of the device. The use of ink bags reduces plastic waste. The user simply clicks in replacement bags and tucks the end of the bag under the roller which moves up the bag as ink is consumed. The chip is contained on the head of the ink bag.



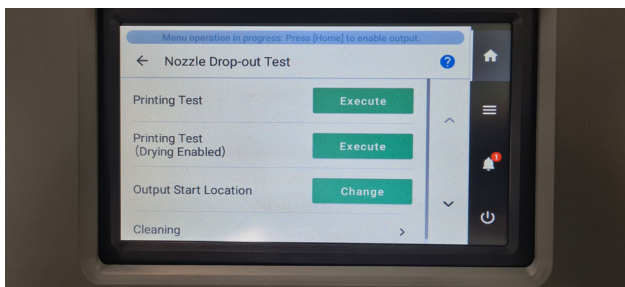
- Waste ink is collected in the waste bottle located on the bottom right of the device. Unloading is a simple lift out process. There is a waste sensor that detects when the bottle is full and, using Roland DG Connect, a message can be sent to the operator advising them of the need to replace.



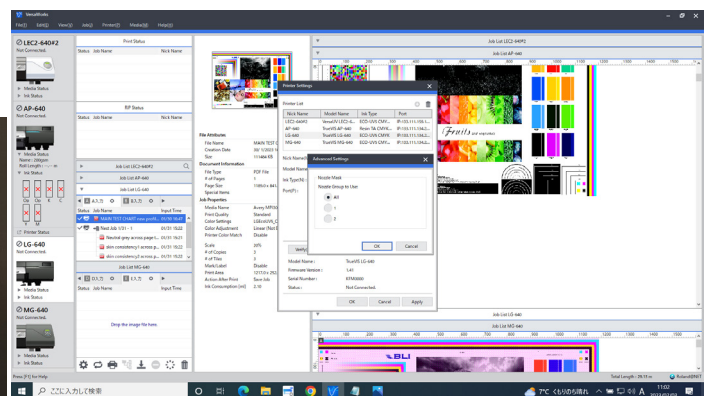
- The device also includes a printhead wiper cleaning fluid which is contained in a cleaning cartridge located to the right side of the device.



- The device displays a message on the touchscreen advising the operator to conduct recommended manual printhead cleaning, the timing for which varies depending on usage. Once the indicated menu is selected, the printhead moves to the left side of the device where the side panel can be opened without unscrewing. After the left cover is opened, the operator uses a cotton bud and cleaning fluid to wipe around the printhead. The whole process takes circa five minutes.
- Roland DG Connect can provide easy monitoring of the maintenance procedures carried out to help maintain A grade health status.
- The printhead features a nozzle compensation function in case any misfiring cannot be fixed by user maintenance. When an operator detects a nozzle blockage, either through printing issues or when conducting a printhead nozzle check, a cleaning routine (normal, medium, or powerful) should be performed. If this does not clear the nozzle blockage the operator can 'switch off' a portion of the printhead where the nozzle resides (the head comprises two zones). This sacrifices 50% productivity but allows for continued use pending a service engineer visit.



Nozzle block test being activated



Nozzle mask control controls in event of unrecoverable nozzle block

▲ SPEED (WITHOUT WHITE LAYER)



▲ SPEED (INCORPORATING WHITE INK LAYER)



KEY FINDINGS

- The LG-640 in its CMYKReOrWW ink formulation was a good performer in color only mode, producing two A0 size targets in twelve minutes, 25 seconds on Avery Dennison MPI 3000 monomeric media, using the most productive High Speed mode.
- The device was also judged to be producing salable content at the more challenging two-foot viewing distance requirement in our MPI 1105 cast vinyl test, delivering a near identical speed as the monomeric media, resulting in a 3.5 star rating.
- On Avery Dennison MPI 1105 cast vinyl, the device printed two targets in twenty-one minutes and 29 seconds at the High Quality setting.
- The fastest draft mode setting was not deemed to be good enough to be used as our most productive salable quality. This mode may be suitable for longer distance work and would deliver a 50% speed increase versus the High Speed mode used in our tests.
- The most productive mode was assessed to be the CMYK only with high density white which printed faster than the gamut expansion ink set in normal white mode and delivered a higher color gamut, improved halftones and more accurate spot colors. The CMYK with just normal white lost too much in image quality, but for less demanding work offered almost 60% more speed again. However, the staggered printhead arrangement can be set up with the white channels in the leading or trailing printhead. This means that the white layer option is limited to either first or last layer when printing in single pass mode (determined by the printhead arrangement purchased), requiring the other white layer option to be handled via two-pass printing.

To compare rival device halftone reproduction results visit bliQ WF

All Speed/Quality Settings Tested on white media

	Avery Dennison MPI 3000	Avery Dennison MPI 1105
Most Productive – 9 pass	745	742
Highest Quality – 16 pass	1292	1289

Time measured (in seconds) for two A0-size targets to be printed in seconds.

Speed Tests Analysis

Devices were timed for two of Keypoint Intelligence's A0-size image quality targets printed in succession with data width turned on so that printing began at the far left of the page. The stopwatch began when the printhead started the print process and ended when the second print completed printing and was ready to cut. The speeds listed below were measured at the most productive setting that produced image quality that Keypoint Intelligence determined as acceptable (no visible banding) on Avery Dennison MPI 3000 media when viewed at 10 feet and on Avery Dennison MPI 1105 media when viewed at two feet. The third speed measured was for the highest quality setting available to print two targets on Avery Dennison MPI 1105.

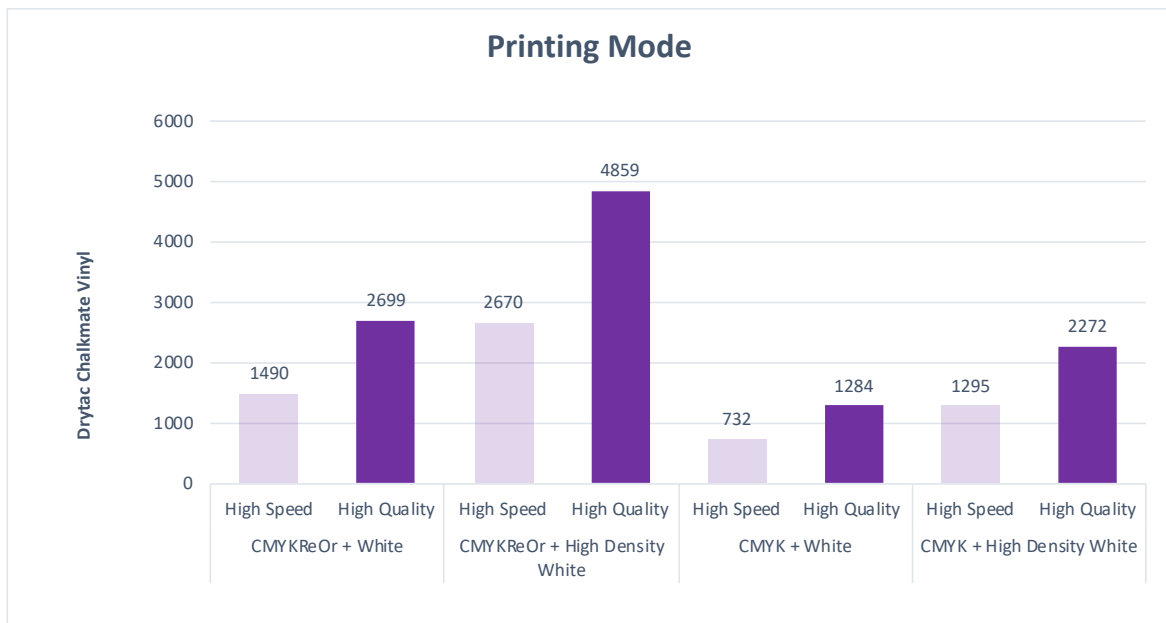
All Speed/Quality Settings Tested including a white ink layer

For devices that support white ink, the same process is applied as for the monomeric vinyl, with Drytac Chalkmate vinyl being assessed from a 10ft viewing distance or most productive analysis. Times are then taken printing with a white underlayer (i.e. when printing on a dark media) and also when white is applied after the colored inks (i.e. as used when printing on window wraps and other clear substrates). Where the printhead setup only allows for one of the two white layer options to be conducted as a single pass, the other layer option is tested as a two-pass process with rewind.

Single pass mode

Printing Mode		Drytac Chalkmate Vinyl
CMYKReOr + White	High Speed	1490
	High Quality	2699
CMYKReOr + High Density White	High Speed	2670
	High Quality	4859
CMYK + White	High Speed	732
	High Quality	1284
CMYK + High Density White	High Speed	1295
	High Quality	2272

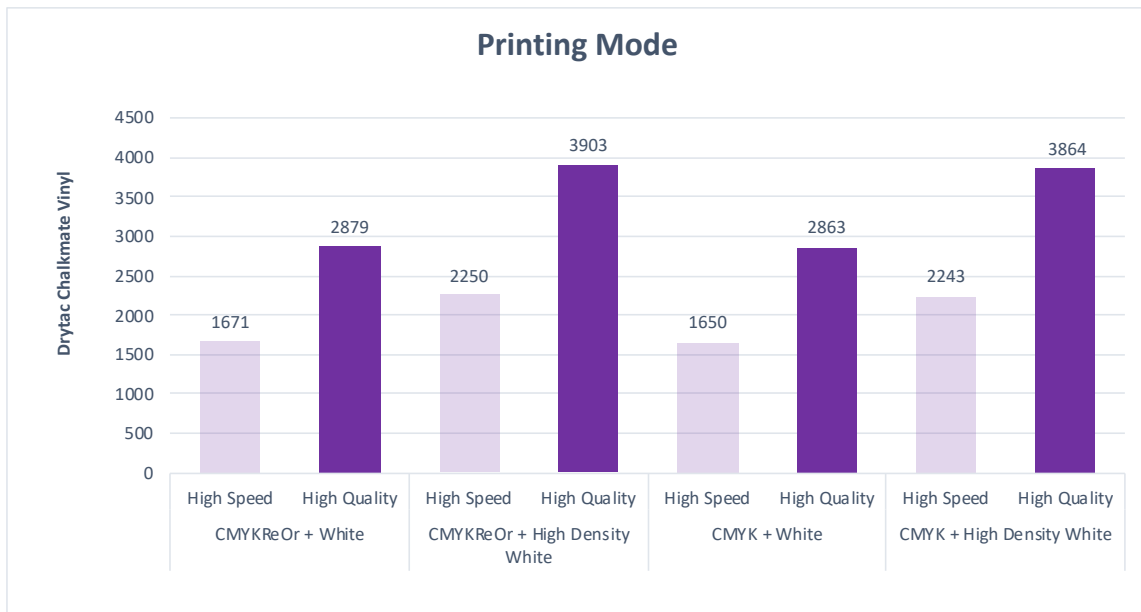
Time measured (in seconds) for two A0-size targets to be printed in seconds



Dual pass mode

Printing Mode		Drytac Chalkmate Vinyl
CMYKReOr + White	High Speed	1671
	High Quality	2879
CMYKReOr + High Density White	High Speed	2250
	High Quality	3903
CMYK + White	High Speed	1650
	High Quality	2863
CMYK + High Density White	High Speed	2243
	High Quality	3864

Time measured (in seconds) for two A0-size targets to be printed in seconds



All Speed/Quality Settings Tested including a white ink layer

For devices that support white ink, the same process is applied as for the monomeric vinyl, with Drytac Chalkmate vinyl being assessed from a 10ft viewing distance or most productive analysis. Times are then taken printing with a white underlayer (i.e. when printing on a dark media) and also when white is applied after the colored inks (i.e. as used when printing on window wraps and other clear substrates). Where the printhead setup only allows for one of the two white layer options to be conducted as a single pass, the other layer option is tested as a two-pass process with rewind.

Supporting Test Data

The unit was evaluated equipped with the ECO-UV EUV5 ink set and VersaWorks 6 RIP at the manufacturer's Japan facility during an intensive five-day test period. 54-inch rolls of Avery Dennison MPI 1105 – polymeric cast vinyl, Drytac CCIP – Color Capture Paper Fleece Ivory media for wallpaper testing and MPI 3000 – monomeric calendared vinyl media were tested on the device. All test files were submitted using the RIP provided by the manufacturer. Keypoint Intelligence utilized media profiles that were prepared by Roland for the evaluation. Ratings are based on a five-star system where five is the best.

About Keypoint Intelligence

For 60 years, clients in the digital imaging industry have relied on Keypoint Intelligence for independent hands-on testing, lab data, and extensive market research to drive their product and sales success. Keypoint Intelligence has been recognized as the industry's most trusted resource for unbiased information, analysis, and awards due to decades of analyst experience. Customers have harnessed this mission-critical knowledge for strategic decision-making, daily sales enablement, and operational excellence to improve business goals and increase bottom lines. With a central focus on clients, Keypoint Intelligence continues to evolve as the industry changes by expanding offerings and updating methods, while intimately understanding and serving manufacturers', channels', and their customers' transformation in the digital printing and imaging sector.