KEYPOINT
INTELLIGENCE
Buyers Lab

Field Test Report
A Comprehensive Keypoint Intelligence Field Evaluation

Epson SureColor SC-S40600
64-Inch Wide Format Printer
Four-Colour Eco-Solvent Ink

EPSON®
EXCEED YOUR VISION

Epson SureColor SC-S40600

64-Inch Wide Format Printer
Four-Colour Eco-Solvent Ink

★★★★☆
Image Quality

Halftone Images	★★★★☆
Colour Accuracy	★★★★⯪
Colour Gamut	★★★★☆
Multi-Panel Wallpaper Consistency	★★★★★

★★★★⯪
Usability

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

★★★★☆
Speed

OUR TAKE

The entry-level four-colour Epson SureColor SC-S40600 gave an exceptional performance throughout BLI's field evaluation. Designed for both indoor and outdoor signage applications, the 64-inch device produced halftone images that were consistently described as having a photo-like appearance, with vibrant colours, high contrast and very good details – even at the most productive 4 pass HQ print setting. Employing merely one set of Epson UltraChrome GS3 CMYK eco-solvent inks, the SureColor SC-S40600 delivered extraordinary PANTONE accuracy as well. The unit generated Delta E00 measurements no greater than 2.48 on average over 15 corporate colours, which will be highly valued by the most colour critical print shops, especially when many competing devices containing additional colours did not achieve such accuracy during testing.

The Epson SC-S40600 yielded extremely accurate dimensional stability and colour consistency during the multi-panel wallpaper test segment, thereby ensuring size and colour repeatability when printing multiple panels for side-by-side display.

The device also provided exceptional ease of use, earning high marks for its well-designed control panel that offered straightforward operation. Yet another notable feature is the device's sturdy lift guide, which makes the roll loading process easy. The printer was tested with Epson's partner software, Onyx RIP Center that provided intuitive operation for job submission and job modification, as well as the free LFP accounting tool that enabled easy tracking of job costs. Moreover, the Epson Control Dashboard utility affords multi-device monitoring and the ability to perform diagnostic testing from any desktop computer. Based on its stellar performance, the Epson SureColor SC-S40600 will be a more than suitable addition for businesses entering the wide format printing field.

BENEFITS

| Superior PANTONE colour accuracy ensures precise production of hard-to-match colours |
| Streamlined operation from well-designed control panel with colour display and 30 media presets |
| Sturdy lift guide makes roll-loading process easier for operators; long print runs facilitated by standard take-up system |
| Free Epson Control Dashboard utility enables multi-device monitoring and diagnostic testing |
| Complimentary Onyx RIP Center software* offers intuitive print job submission and job modifications |
| Epson LFP Accounting Tool automates accounting tasks |
| Easy 700-ml. ink cartridge and waste ink tank replacement |

ADVANTAGES

| Most productive 4 Pass HQ print setting provides vibrant, consistently very good image quality across virtually all halftone images |
| Exceptional dimensional stability leads to highly accurate multi-panel artwork |
| Accurate remaining media length counted down; "print remaining media" tracking capability |
| Alert lamp atop control panel and audible alarm provide device warnings; internal printer light for enhanced print job inspection |

LIMITATIONS

| Lacks automatic cutter |
| High contrast results in loss of some highlight details |

*Offered in select countries

IMAGE QUALITY ★★★★☆

Halftone Images		★★★★☆
Colour Accuracy		★★★★⯪
Colour Gamut		★★★★☆
Multi-Panel Wallpaper Hanging		★★★★★

BLI TEST CHART

Four corner densities

Colour gamut

Fine highlight and shadow details

Grey neutrality and shadow detail

PANTONE colour accuracy

Saturation, textures and memory colours

Fine details

Textures and metalic colour reproduction

Skin tone and smoothness

Pos/Neg Text

Pos/Neg Lines

HALFTONE IMAGES

★★★★☆

Images	MPI 3000: Most Productive	MPI 1105: Most Productive	MPI 1105: Highest Quality
A Elephants	Good	Good	Good
B Salmon	Very Good	Excellent	Very Good
C Volcano	Excellent	Very Good	Very Good
D Jewelry	Very Good	Very Good	Very Good
E Face	Very Good	Fair	Fair
F Fruit	Very Good	Very Good	Very Good

Halftone image quality was assessed using BLI's proprietary A0-size wide format test target that comprises six high quality colour/black-and-white halftone images. The test target was printed at the most productive speed/quality setting that produced overall quality without visible banding on both Avery Dennison MPI 1105 and MPI 3000 media. For the Epson SC-S40600 the 4 pass HQ setting was selected for both. The target was also printed at the highest quality 16 pass setting on MPI 1105 media. Each of the six images was cut from the larger target and visually appraised for colour accuracy, brightness, sharpness and contrast by two technicians at a distance of ten feet for the MPI 3000 media and at a distance of two feet for the MPI 1105 media.

Test Results

A   Under each test condition on both Avery Dennison media, the elephant image appeared slightly reddish with average contrast.

B   The salmon image exhibited a bright, photo-like appearance with high contrast and very good details when printed on both Avery Dennison media.

C   The volcano image also displayed a photo-like appearance when printed on the Avery Dennison MPI 3000 media, with vibrant colours, very good details and high contrast.

D   The jewelry image exhibited above average sharpness with bright colours and good details under each condition tested.

E   On Avery Dennison MPI 3000 media at the most productive setting, the facial image displayed smooth skin tones and high contrast, though a loss of highlight detail was observed.

F   All colours in the fruit image were bright with very good details when printed on both Avery Dennison media.

Although continuing to deliver very good image quality overall, the slower 16 Pass setting did not produce an improvement in image quality on the MPI 1105 media, indicating that users will not always benefit by using a higher quality (slower) print setting for the Epson SC-S40600.

PANTONE CORPORATE COLOUR ACCURACY

★★★★⯨

AVERY DENNISON MPI 1105: MOST PRODUCTIVE (4 PASS HQ)

PANTONE Colour	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	5.92	4.18	2.53	3.13	1.43	2.06	1.20	2.13
PANTONE Colour	137 C Veuve Cliquot	279 C Microsoft	574 C Harrods	361 C FedEx	476 C UPS	RHOD RED C T-Mobile	294 C Ford	Average ΔE00
ΔE00	4.31	3.08	1.27	0.31	0.93	2.49	0.33	2.35

AVERY DENNISON MPI 1105: HIGHEST QUALITY (16 PASS)

PANTONE Colour	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	6.28	3.54	2.06	3.75	1.89	1.80	1.20	1.74
PANTONE Colour	137 C Veuve Cliquot	279 C Microsoft	574 C Harrods	361 C FedEx	476 C UPS	RHOD RED C T-Mobile	294 C Ford	Average ΔE00
ΔE00	4.61	2.34	1.55	1.00	1.33	2.90	1.27	2.48

The average Delta E00 across all 15 corporate colours measured 2.35 when printed on Avery Dennison MPI 1105 media at the most productive – 4 pass HQ – setting. Twelve of 15 colours measured less than 4.0 Delta E00 units under these conditions.

The average Delta E00 across the 15 colours measured 2.48 when printed at the highest quality – 16 pass – setting, and 13 of 15 colours had Delta E00 measurements that were less than 4.0.

COLOUR GAMUT

★★★★☆
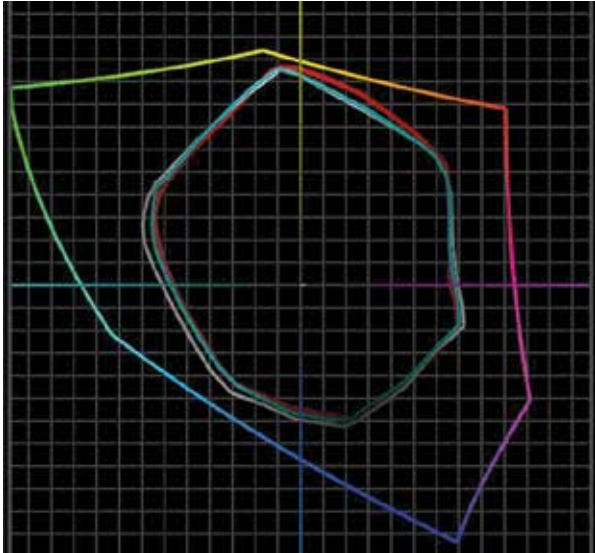
Media: Setting	Graphic Colour Representation	Colour Gamut (CIE) Volume
Avery Dennison MPI 3000: Most Productive	White	533,358
Avery Dennison MPI 1105: Most Productive	Cyan	503,854
Avery Dennison MPI 1105: Highest Quality	Red	503,683

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

The Epson SC-S40600's three colour gamuts are slightly larger than the average among all devices tested.

DENSITY

AVERY DENNISON MPI3000: MOST PRODUCTIVE (4 PASS HQ)

	Top Left	Top Right	Bottom Left	Bottom Right
Cyan	1.69	1.70	1.70	1.70
Magenta	1.53	1.54	1.54	1.54
Yellow	1.11	1.11	1.11	1.11
Black	1.93	1.92	1.87	1.94

AVERY DENNISON MPI1105: MOST PRODUCTIVE (4 PASS HQ)

	Top Left	Top Right	Bottom Left	Bottom Right
Cyan	1.57	1.59	1.61	1.61
Magenta	1.11	1.11	1.13	1.13
Yellow	1.81	1.81	1.85	1.83
Black	1.81	1.81	1.85	1.83

AVERY DENNISON MPI 1105: HIGHEST QUALITY (16 PASS)

	Top Left	Top Right	Bottom Left	Bottom Right
Cyan	1.59	1.63	1.60	1.65
Magenta	1.71	1.67	1.72	1.71
Yellow	1.22	1.21	1.23	1.20
Black	1.77	1.73	1.78	1.71

COLOUR CONSISTENCY – DELTA E00 ACROSS PAGE
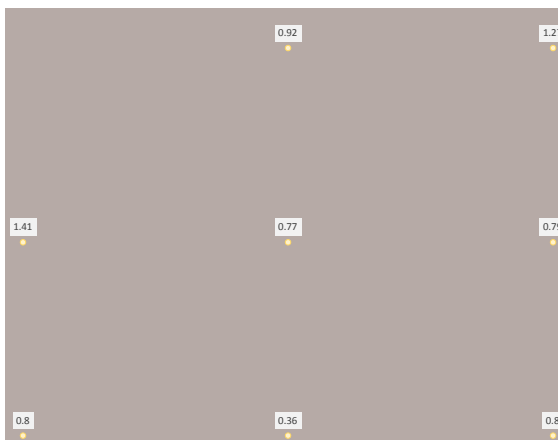
Grey
Average   0.89
Maximum 1.41

Skin Tone 1
Average   1.05
Maximum 1.32
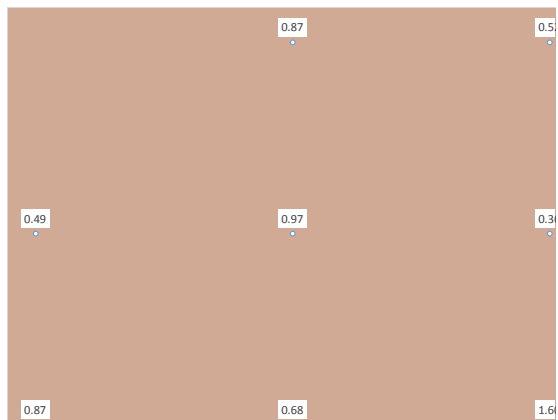
Skin Tone 2
Average   0.65
Maximum 0.97

Colour consistency was assessed by comparing the top left corner against eight other locations on three A0-size targets printed on Avery Dennison MPI 1105, each target comprising a different neutral solid colour. The Delta E00 was measured using an XRite eXact spectrophotometer.

MULTI-PANEL WALLPAPER CHART: COLOUR AND LINE CONSISTENCY

★★★★★

To assess the consistency of output when producing wall-hanging or other multi-panel artwork, BLI printed a series of six targets and compared the adjoining edges to assess colour consistency and dimensional accuracy with three neutral colour patches and a metre length line. The panels were assessed with and without rotation, as seen below.
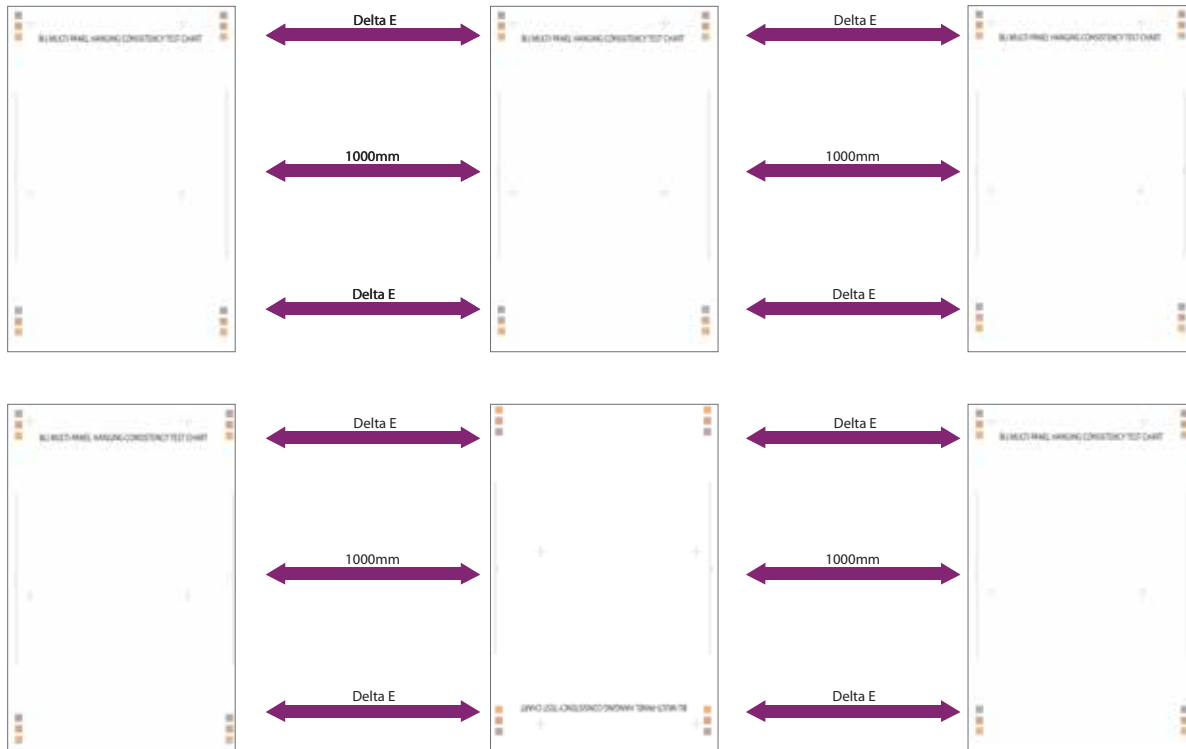
	Maximum Delta E00 On Panels in Portrait Orientation	Maximum Delta E00 On Panels in 180° Orientation
Neutral Grey Top	0.66	1.44
Neutral Grey Bottom	1.24	1.31
Skin Tone 1 Top	1.33	1.06
Skin Tone 1 Bottom	1.26	1.25
Skin Tone 2 Top	0.69	1.40
Skin Tone 2 Bottom	0.74	0.81
Line Measurement Accuracy – Maximum Difference Between Panels (in mm)	0.56	0.15

The maximum colour variation measured 1.33 Delta E units for the three neutral colours in portrait orientation and 1.44 Delta E units in rotated orientation.

Maximum one metre line variation from panel to panel measured 0.56-mm. for non-rotated panels and 0.15-mm. for rotated panels.

⬤ USABILITY   ★★★★⯪

⬤ MEDIA HANDLING   ★★★★⯪

Epson SureColor lift guide improves the roll loading process.

Affixing media to the standard take-up reel is a straightforward process.

Up to thirty media selections can be configured at the control panel; the specific print settings, including a distinctive name, must first be entered for each. (Epson provides numerous presets for commonly used media.) Once a selection is made, various patterns can be selected to establish optimum print quality/conditions before printing a job.

A remaining media alert can be set to warn users of a pending out of media situation. Moreover, users can "print the remaining length" before removing a roll so that, upon reinstalling, an accurate length be entered. The media's name and width are also printed.

If an incorrect media roll is detected, a "waiting for media mismatch" warning is provided in the RIP.

The Epson SC-S40600 does not have an automatic cutter; instead, the cut must be made manually with a blade. The manual cutting process is relatively easy as the unit has a recessed groove that can be used as a cut guide.

Conveniently, after forwarding or retracting roll media (for instance, to position it properly to be cut), the device will automatically return the media roll to its previous position so as to reduce waste before the next job is printed.
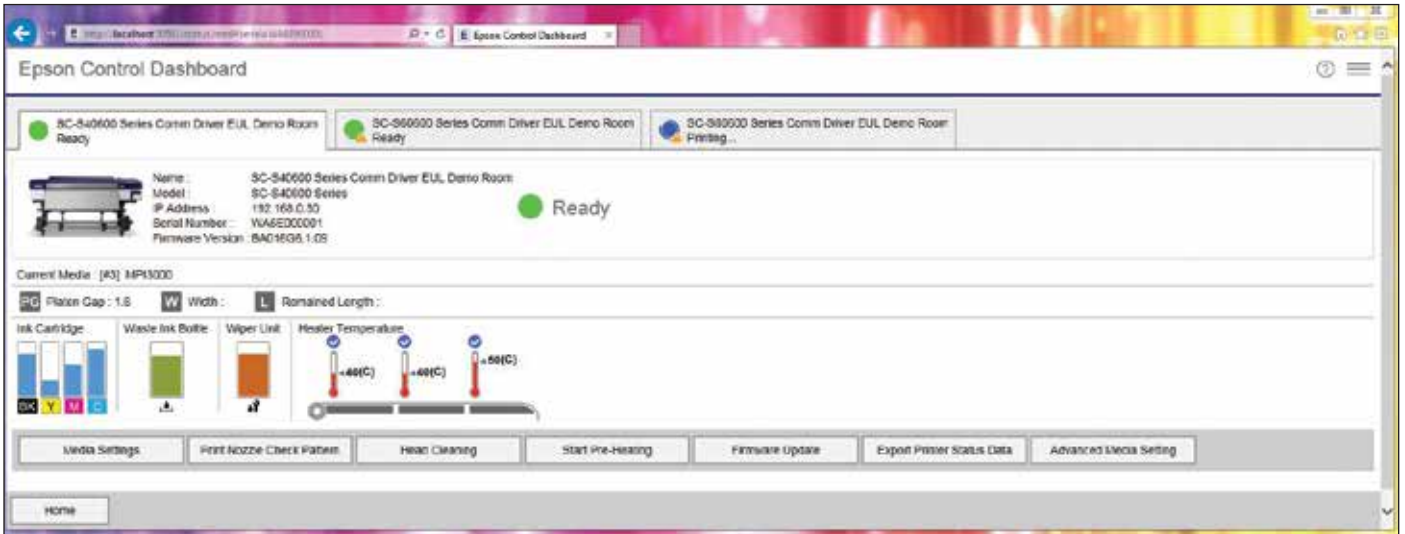
DEVICE MANAGEMENT AND MONITORING

★★★★★
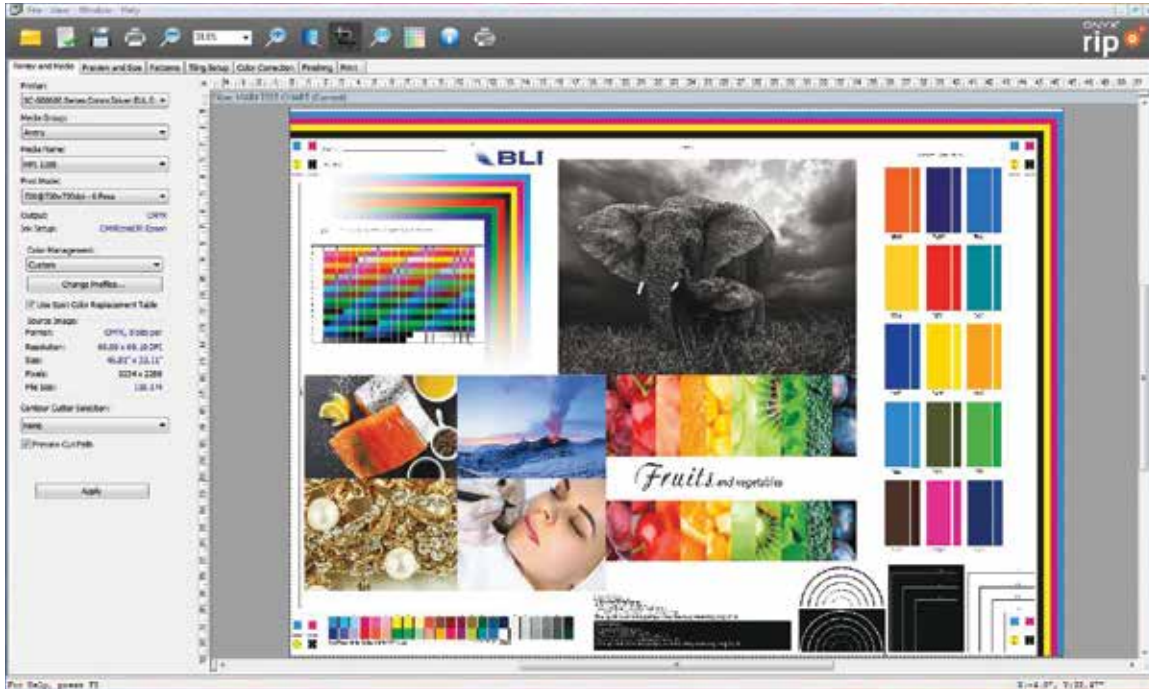
Onyx RIP Center comes as standard with the Epson SC-S40600. As tested with the Onyx ProductionHouse RIP, however, settings for media type; print quality; colour management and correction; nesting and tiling; sizing and rotation; grommet, bleed and marks placement; as well as numerous others can be readily modified.
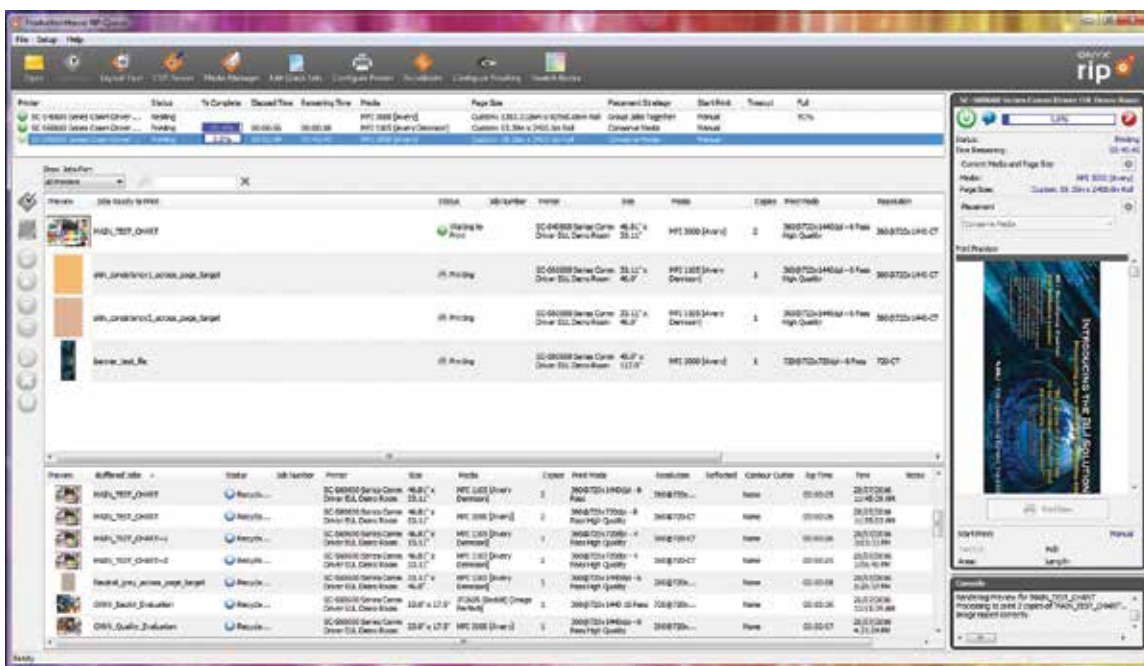
From the Onyx RIP Queue, users can monitor jobs on all networked SureColor devices.

Accessed via either Windows, Mac or Linux platforms, Epson's Control Dashboard utility provides comprehensive device and media monitoring capabilities for all networked SureColor devices. Moreover, printhead cleanings and other maintenance routines can be performed remotely from the utility.

Epson's free LFP Accounting Tool automates accounting for SureColor SC-S40600 users. In addition to tracking the costs of ink and media, this handy utility can be used to track ancillary costs such as lamination, labour and transportation.

Web page and tablet access are available for monitoring the device as well. Up to 10 email addresses can be configured via the unit's web page to receive device alerts, warnings and error messages.

From the optional ProductionHouse RIP, users have the ability to create a swatchbook from which specific colours can be modified for closer matching.

The Epson SureColor SC-S40600's well-designed control panel consists of ten buttons and a colour display that provides straightforward operation. Selections for media load/forward/retract, device maintenance, heater and job pause are accessible directly on the panel.

The SureColor SC-S40600 features an alert lamp directly at the top of the control panel that flashes when an error occurs. Moreover, the control panel has a button that enables users to turn on a light that illuminates the inside of the device, highlighting the job that's being printed.

MAINTENANCE AND INK

★★★★☆

Each of the four colour cartridges comes in 700ml. capacity. When an ink cartridge is depleted during a print job, the printhead carriage pauses, enabling the empty cartridge to be replaced. (Pictured is the Epson S80600.)

A partially empty cartridge that is purposely removed, for instance when a long print run is expected, can be re-installed later and still supply an accurate amount of remaining ink, the information for which is contained on the IC chip.

Three levels of printhead cleaning – light, medium and heavy, as well as additional maintenance procedures are easily accessed at the control panel.
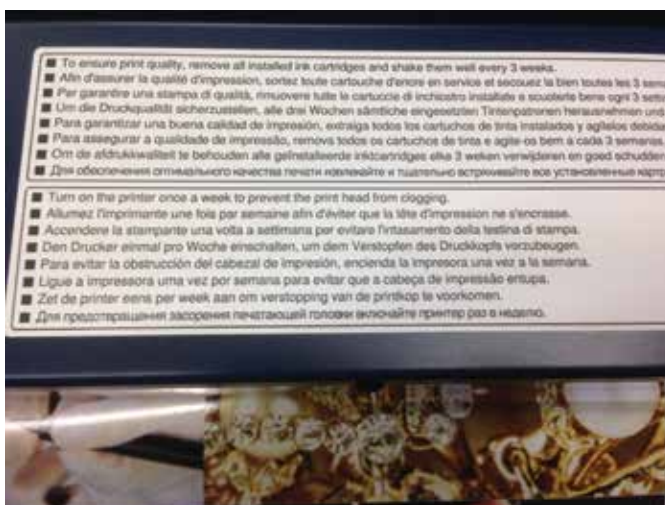
Recommended maintenance labels are affixed to the device as a convenient reminder to the operator.
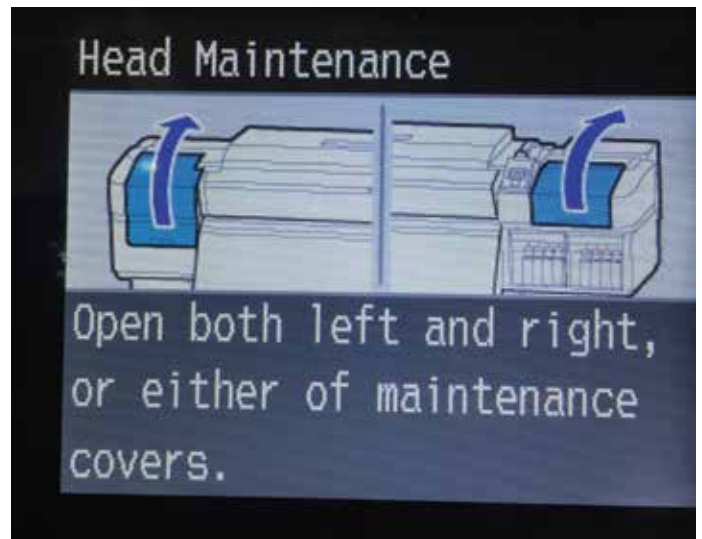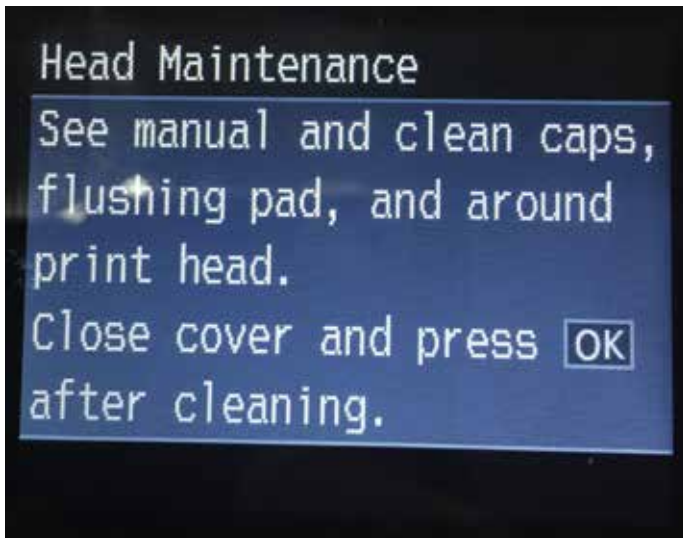
The control panel also offers maintenance recommendations and step-by-step procedures.
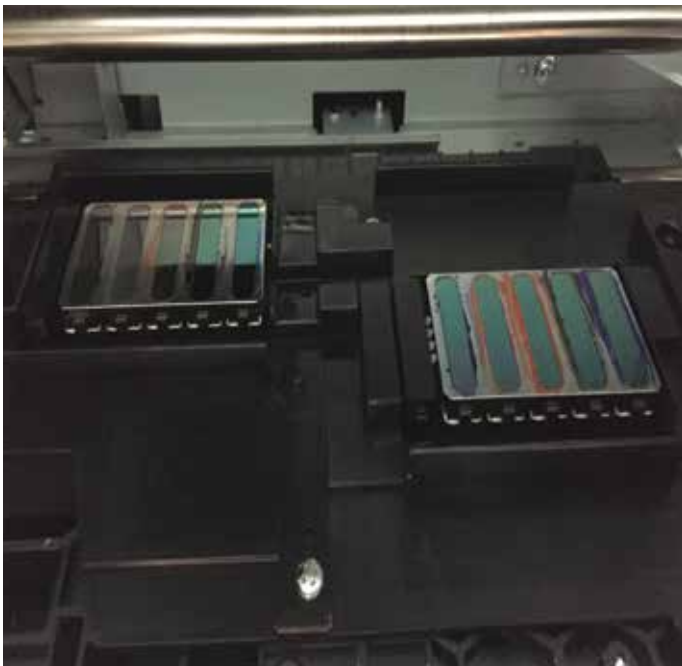
Epson supplies a cleaning kit for the recommended monthly maintenance procedures. The cleaning stick can be used to wipe ink from partial cartridges that have been removed before reinserting. Other routine maintenance includes cleaning around the printhead, a simple process initiated at the control panel.

The device has a waste ink counter that alerts users when the waste ink tank needs to be replaced. The process simply requires the removal of the full bottle after carefully removing the ink tube; capping the full bottle; and inserting the ink tube into a new bottle. Acknowledging the bottle's replacement at the control panel resets the counter.

⏣ SPEED
★★★★☆

Devices were timed for two of BLI'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 BLI 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.

Print Speed: Two A0-Size Targets
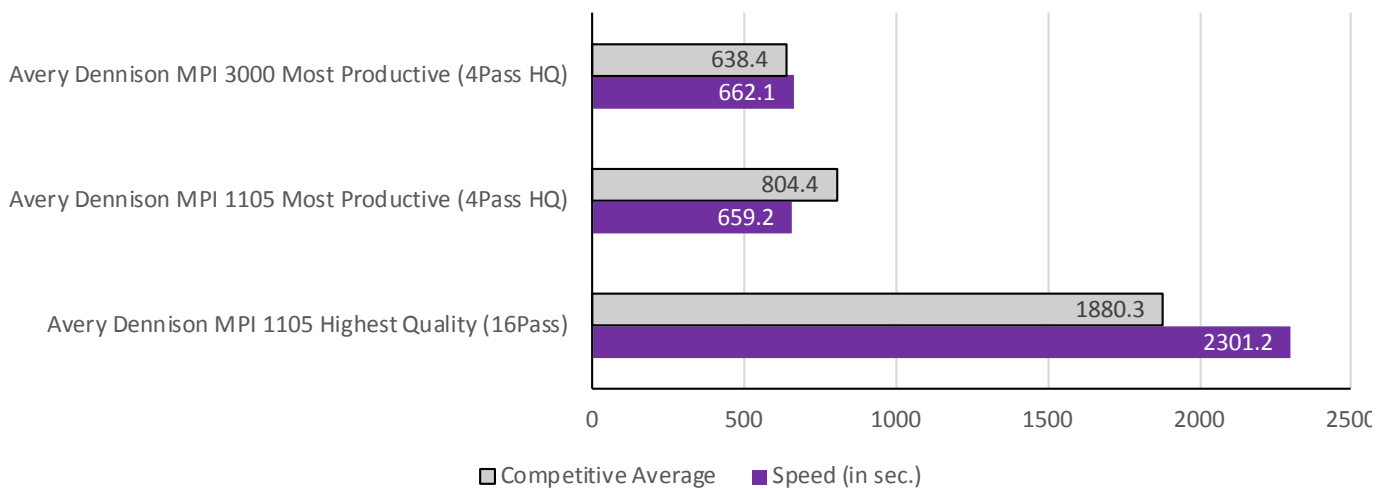
	Competitive Average	Speed (in sec.)
Avery Dennison MPI 3000 Most Productive (4Pass HQ)	638.4	662.1
Avery Dennison MPI 1105 Most Productive (4Pass HQ)	804.4	659.2
Avery Dennison MPI 1105 Highest Quality (16Pass)	1880.3	2301.2

☐ Competitive Average ■ Speed (in sec.)

All Speed/Quality Settings Tested

Speed/Quality Setting	Avery Dennison MPI 3000	Avery Dennison MPI 1105
4 Pass HQ	662.12	659.22
6 Pass	819.00	817.38
6 Pass HQ	914.12	910.70
8 Pass HQ	1233.28	1243.03
16 Pass	2308.28	2301.22

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

At the most productive 4 Pass HQ setting, the Epson SC-S40600 produced two A0-size targets in 11 minutes and 2.12 seconds on the Avery Dennison MPI 3000 media, and in 10 minutes and 59.22 seconds on the Avery Dennison MPI 1105 media.

At the highest quality 16 pass setting, two A0-size targets were printed in 38 minutes and 21.22 seconds on MPI 1105 media.

SUPPORTING TEST DATA

The unit was evaluated at the manufacturer's U.K. facility during an intensive three-day test period. 54-inch rolls of Avery Dennison MPI 1105 – polymeric cast vinyl, MPI 2105 – calendared vinyl film and MPI 3000 – monomeric calendared vinyl media were tested in each device. All test files were submitted using the RIP provided by the manufacturer. BLI utilised media profiles that were already part of Epson's library for Avery Dennison MPI 1105, 2105 and 3000 media during the evaluation. No additional profiling or profile modifications were made during testing. Ratings are based on a five-star system where five is the best.

Note: Two BLI analysts independently evaluated the individual sections of BLI's subjective image quality test, each judged on its own merits, with printer identifiers hidden. Under standard lab lighting conditions each analyst ranked the print samples into five quality classifications (Excellent, Very Good, Good, Fair, Poor) and 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. 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 2 feet (reflecting a close-up viewing experience).

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