Field Test Report
A Comprehensive Keypoint Intelligence Field Evaluation

Epson SureColor SC-S80600
64-Inch Wide Format Printer
Nine-Colour Plus White Eco-Solvent Ink
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OUR TAKE

Designed for both indoor and outdoor signage applications, the Epson SureColor SC-S80600 performed brilliantly during BLI’s wide format printer field evaluation, demonstrating many impressive attributes. Orange and red Epson UltraChrome GS3 inks accompany the seven standard colours (CMYKLcLmLk), as well as optional white and metallic silver inks—a formidable combination that enabled extremely accurate matching of virtually all PANTONE colours in BLI’s quality targets. To be sure, the Epson SC-S80600 produced an extraordinary Delta E00 measurement of less than one for a difficult-to-reproduce PANTONE 165, (Home Depot orange). The unit delivered image quality that, in many instances, BLI technicians noted as having a photo-like appearance. The unit generated colours that were vibrant, images routinely exhibited high contrast and above average sharpness, and grey neutrality was consistently maintained on black-and-white halftones. As an added benefit, these results were attained at the fastest print speed—6 Pass—that BLI tested for the SC-S80600.

The Epson SC-S80600 provided exceptional ease of use as well, earning high marks for its well-designed control panel that offers straightforward operation. Yet another strong feature is the Epson “lift guide,” which makes the roll-loading process easy. Complimentary software includes Onyx RIP Center that provided intuitive operation for job submission and job modification, as well as the LFP accounting tool that enabled easy tracking of job costs. Moreover, the Epson Control Dashboard affords multi-device monitoring as well as the ability to perform diagnostic testing from any desktop computer. An all-around top performer, BLI believes the Epson SureColor SC-S80600 will be a strong choice for virtually all wide format printing applications.
BENEFITS

- Outstanding PANTONE colour accuracy ensures precise production of hard-to-match colours
- Above average productivity translates to faster turnaround
- Streamlined operation from well-designed control panel with colour display and thirty media presets
- Sturdy lift guide makes the 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 6 Pass setting provides vibrant, photo-like image quality on all media tested
- Largest cumulative colour gamut measured across three print scenarios
- Exceptional dimensional stability with no more than 1.20-mm. variation per metre line for precise production of multi-panel prints
- Accurate remaining media length counted down; “print remaining media” tracking capability
- Alternative metallic ink option instead of white
- 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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halftone Images</td>
<td>★★★★★</td>
</tr>
<tr>
<td>Colour Accuracy</td>
<td>★★★★★</td>
</tr>
<tr>
<td>Colour Gamut</td>
<td>★★★★★</td>
</tr>
<tr>
<td>Multi-Panel Wallpaper Hanging</td>
<td>★★★★★</td>
</tr>
</tbody>
</table>

### 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 metallic colour reproduction
- Skin tone and smoothness
- Pos/Neg Text
- Pos/Neg Lines
## HALFTONE IMAGES

<table>
<thead>
<tr>
<th>Images</th>
<th>MPI 3000: Most Productive</th>
<th>MPI 1105: Most Productive</th>
<th>MPI 1105: Highest Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Elephants</td>
<td>Excellent</td>
<td>Very Good</td>
<td>Very Good</td>
</tr>
<tr>
<td>B Salmon</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Very Good</td>
</tr>
<tr>
<td>C Volcano</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>D Jewelry</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Very Good</td>
</tr>
<tr>
<td>E Face</td>
<td>Very Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>F Fruit</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Very Good</td>
</tr>
</tbody>
</table>

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 target was printed at the most productive speed/quality setting that produced acceptable overall quality without visible banding on both Avery Dennison MPI 3000 and MPI 1105 media. For the Epson SC-S80600, the 6 pass setting was selected for both. The target was also printed on MPI 1105 media at the highest quality setting, which for this device is 16 pass. 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 On the Avery Dennison MPI 3000 media at the most productive setting, grey tones were neutral and the elephant image was vibrant with very good contrast.

B On both Avery Dennison media, the salmon image was consistently vibrant and photo-like in appearance.

C Likewise on both media, the volcano image consistently exhibited a vibrant and photo-like appearance.

D On both Avery Dennison media, the jewelry image exhibited above average sharpness and very good details.

E The facial image exhibited a slight loss of highlight details due to an overly-bright appearance, especially on the Avery Dennison MPI1105 media.

F On both Avery Dennison media, the fruit image exhibited above average sharpness, accurate colour reproduction and very good details.

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 on the Epson SC-S80600.
The Epson SC-S80600 produced an average Delta E00 for the 15 colours of 2.07 at the 6 Pass setting and 1.74 at the 16 Pass setting. Of note, the Epson SC-S80600 achieved amazingly low Delta E measurements of 0.88 and 1.07 at those respective settings for Pantone 165, a particularly difficult to match orange. 14 of 15 corporate colours had Delta E00 measurements that were less than 4.0, and in fact, remarkably, the majority of colours delivered measurements under 2.0.
COLOUR GAMUT

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

The Epson SC-S80600 delivered the largest cumulative colour gamut volume among all the devices evaluated.

DENSITY

AVERY DENNISON MPI3000: MOST PRODUCTIVE (6 PASS)

<table>
<thead>
<tr>
<th>Media: Setting</th>
<th>Graphic Colour Representation</th>
<th>Colour Gamut (CIE) Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avery Dennison MPI 3000: Most Productive</td>
<td>White</td>
<td>638,232</td>
</tr>
<tr>
<td>Avery Dennison MPI 1105: Most Productive</td>
<td>Cyan</td>
<td>592,478</td>
</tr>
<tr>
<td>Avery Dennison MPI 1105: Highest Quality</td>
<td>Red</td>
<td>602,077</td>
</tr>
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</table>

AVERY DENNISON MPI1105: MOST PRODUCTIVE (6 PASS)

<table>
<thead>
<tr>
<th>Media: Setting</th>
<th>Top Left</th>
<th>Top Right</th>
<th>Bottom Left</th>
<th>Bottom Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyan</td>
<td>1.80</td>
<td>1.81</td>
<td>1.80</td>
<td>1.80</td>
</tr>
<tr>
<td>Magenta</td>
<td>1.61</td>
<td>1.61</td>
<td>1.62</td>
<td>1.61</td>
</tr>
<tr>
<td>Yellow</td>
<td>1.15</td>
<td>1.14</td>
<td>1.14</td>
<td>1.13</td>
</tr>
<tr>
<td>Black</td>
<td>1.86</td>
<td>1.85</td>
<td>1.85</td>
<td>1.82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Media: Setting</th>
<th>Top Left</th>
<th>Top Right</th>
<th>Bottom Left</th>
<th>Bottom Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyan</td>
<td>1.70</td>
<td>1.68</td>
<td>1.68</td>
<td>1.69</td>
</tr>
<tr>
<td>Magenta</td>
<td>1.55</td>
<td>1.54</td>
<td>1.50</td>
<td>1.54</td>
</tr>
<tr>
<td>Yellow</td>
<td>1.06</td>
<td>1.05</td>
<td>1.08</td>
<td>1.07</td>
</tr>
<tr>
<td>Black</td>
<td>1.67</td>
<td>1.65</td>
<td>1.67</td>
<td>1.66</td>
</tr>
</tbody>
</table>
### AVERY DENNISON MPI 1105: HIGHEST QUALITY (16 PASS)

<table>
<thead>
<tr>
<th></th>
<th>Top Left</th>
<th>Top Right</th>
<th>Bottom Left</th>
<th>Bottom Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyan</td>
<td>1.66</td>
<td>1.65</td>
<td>1.69</td>
<td>1.67</td>
</tr>
<tr>
<td>Magenta</td>
<td>1.58</td>
<td>1.56</td>
<td>1.60</td>
<td>1.59</td>
</tr>
<tr>
<td>Yellow</td>
<td>1.19</td>
<td>1.17</td>
<td>1.18</td>
<td>1.18</td>
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<tr>
<td>Black</td>
<td>1.75</td>
<td>1.73</td>
<td>1.78</td>
<td>1.79</td>
</tr>
</tbody>
</table>

### COLOUR CONSISTENCY – DELTA E00 ACROSS PAGE

**Skin Tone 1**
- Average: 0.75
- Maximum: 1.78

**Skin Tone 2**
- Average: 0.37
- Maximum: 0.60

**Grey**
- Average: 0.90
- Maximum: 1.21

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 X-Rite 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.

<table>
<thead>
<tr>
<th></th>
<th>Maximum Delta E00 On Panels in Portrait Orientation</th>
<th>Maximum Delta E00 On Panels in 180° Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral Grey Top</td>
<td>1.17</td>
<td>1.39</td>
</tr>
<tr>
<td>Neutral Grey Bottom</td>
<td>0.95</td>
<td>1.29</td>
</tr>
<tr>
<td>Skin Tone 1 Top</td>
<td>0.92</td>
<td>0.64</td>
</tr>
<tr>
<td>Skin Tone 1 Bottom</td>
<td>0.65</td>
<td>1.42</td>
</tr>
<tr>
<td>Skin Tone 2 Top</td>
<td>0.51</td>
<td>1.52</td>
</tr>
<tr>
<td>Skin Tone 2 Bottom</td>
<td>0.23</td>
<td>0.72</td>
</tr>
<tr>
<td>Line Measurement Accuracy – Maximum Difference Between Panels (in mm)</td>
<td>0.99</td>
<td>1.20</td>
</tr>
</tbody>
</table>

The maximum colour variation measured 1.52 Delta E units for the three neutral colours across six wallpaper panels in rotated orientation. In portrait orientation, the maximum Delta E was 1.17.

In portrait orientation, the maximum one metre line variation measured 0.99-mm, and in rotated orientation it is 1.20-mm.
**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 at the RIP.

The Epson SC-S80600 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.
Onyx RIP Center comes as standard with the Epson SC-S80600. 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.
Epson’s free LFP Accounting Tool automates accounting for SureColor SC-S80600 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.

Available within the optional Onyx ProductionHouse RIP, a swatchbook that enables users to readily modify specific colours can be created and printed on the Epson SC-S80600.
The Epson SureColor SC-S80600’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-S80600 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 main nine standard colours comes in 700ml capacity. The white ink cartridge is available in 600ml size, while the silver metallic ink option comes in a 350ml capacity. When an ink cartridge is depleted during a print job, the printhead carriage pauses, enabling the empty cartridge to be replaced.

Partially empty cartridges that are 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.
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. Lastly, for devices that employ white ink, one A0-size image quality target was printed at the manufacturer’s recommended quality setting.

### Print Speed: Two A0-Size Targets

<table>
<thead>
<tr>
<th>Speed/Quality Setting</th>
<th>Avery Dennison MPI 3000</th>
<th>Avery Dennison MPI 1105</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Pass</td>
<td>494.25</td>
<td>514.18</td>
</tr>
<tr>
<td>8 Pass HQ</td>
<td>721.53</td>
<td>690.15</td>
</tr>
<tr>
<td>16 Pass</td>
<td>1292.92</td>
<td>1235.10</td>
</tr>
</tbody>
</table>

Time measured (in seconds) for two A0-size targets to be printed.
At the most productive 6 pass setting, the Epson SC-S80600 produced two A0 size targets in 8 minutes and 14.25 seconds on Avery Dennison MPI 3000 media.

At the same 6 pass setting on MPI 1105 media, the Epson SC-S80600 produced two targets in 8 minutes and 34.18 seconds.

One A0-size target printed on front lit media using white ink at the Epson-recommended 27 pass setting completed the print process in 16 minutes and 42.00 seconds and was ready to cut at 21 minutes and 1.50 seconds after drying.
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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