Digital Equipment Evaluation Report

Fujifilm Acuity LED 1600 II

September 2017

Description of Machine
The Acuity LED 1600 II is a 64" wide format hybrid printer featuring a proprietary-design LED light source, high precision, high-speed, printheads, and optimized fast curing UV LED ink. The Acuity LED 1600 II is designed for the printer new to wide format inkjet printing or for users who wish to save costs by printing with the newest LED UV curing technology. Fujifilm’s proprietary Fast Accurate Marking technology enables productivity of 355 sq. ft/hour. The hybrid design allows for printing on wide format roll media, rigid board and sheet substrates up to 10 mm (.375") for rigid materials and for up to 0.04" (1 mm) for roll printing, and 63.3” wide. The print tables have a unique folding compact design that takes up minimal storage space.

Specifications
- Height: 61 in. (155 cm)
- Width: 128 in. (325 cm)
- Depth: 31 in. (79 cm)
- Weight (w/stand): 617 lbs. (280 kg)
- Country of Manufacture: Japan

Print Width/Print Dimensions
- Max Print Width: 63.3 in. (161 cm)
- Max media (roll option) weight: 55 lbs. (25 kg)
- Max media (rigid option) weight: 15 lbs. (7 kg)
- Max Media Thickness (for printing): .375 in. (10 mm)

Number of Colors (8)
- CMYK lc lm white clear

Printing Resolutions/Modes
- 600x300 Express 6 pass
- 600x500 Production 10 pass
- 900x800 Standard 16 pass
- 1200x1200 Quality 24 pass
- 1200x1200 High Quality 48 pass

Operating Environment/Connectivity
- Ambient temp.: 20° to 25° C (68° to 77° F) maintained within +/- 18° F per hour during printing for quality assurance. The minimum specification can be 15° C to 30° C (59° F to 86° F)
- Max. humidity: 40-70% RH, non-condensing
- USB 2.0

Features
- Unique hybrid design for easy switchover from roll to rigid
- Single pass printing of two or three layers of color, white and clear simultaneously
- VersaDrop jetting technology adjusts ink droplet size according to the image
- Fast-drying ink allows for immediate processing

Activities for Standard Routine Maintenance
- Daily purge of ink: 5 minutes
- Clean encoder strip 1x per month: 5 minutes

RIP Availability/Compatibility
- Printer ships with AL 1600 RIP. Also compatible with Colorgate, Caldera (v9.2 or later) and Onyx (v11.1 or later).

Ink Capacity and Cost (MSRP)
- 600 ml pouches: $ Contact Manufacturer

Print Head
- Fujifilm Dimatix Q-class printheads
- Replacement cost (out of warranty): $ Contact Manufacturer

Power and Venting Requirements
- AC 100-120V, 200-240V, 50/60Hz

Manufacturer's Suggested Retail Price
- Acuity LED 1600 II: $ Contact Manufacturer
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Print Quality Tests

The SGIA test image was printed on FujiFilm Poster Paper on the Acuity LED 1600 II using 300 dpi. RGB input profile set to AdobeRGB(1998) and CMYK input profile set to CalderaCMYK using Caldera’s Grand RIP. The Rendering intent was set to Perceptual. An SGIA control print using an Epson 7800 with semi-matte proofing media and validated with Color*Metrix ProofPass software was used for the spectral evaluation comparisons – measurements are taken in the areas that are designated with the circled numbers and compared in the column at the right.

Objective measurements (taken from Acuity LED 1600 II)

#1 Pantone Spot Colors*  ΔE
Pantone 185C  4.98
Pantone 300C  2.77
Pantone 512C  2.80
Pantone 375C  4.06
Pantone 7548C  3.37
Pantone 165C  5.98
Pantone 102C  0.85
Pantone 297C  2.45

*All spot colors above were measured from the SGIA test image printed by the Acuity LED 1600 II and using an X-Rite Exact with the following measurement conditions: D50/2*, CIE ΔE 2000, and M1. The paper was measured before all measurements were taken (see paper values under Gamut and Density).

#2 Neutral Gray Density
Cyan density of 0.61; Magenta density of 0.59; and Yellow density of 0.57. Neutral gray was created by mixing 50% Cyan, 40% Magenta, and 40% Yellow. In the density measurements above, a neutral gray would typically measure CMY at 0.58, if a color above is off by more than 0.02 from the 0.58 you may be able to see a color cast.

Ink Usage for 36” x 24” test image as seen above
C 1.03 M 0.78 Y 6.10 K 2.07 Lc 7.03 Lm 7.95

Spectral Evaluations (L*a*b* comparison)

#3 Control Print  Acuity LED 1600 II
L*30.29 a*6.15 b*-47.98  L*27.37 a*3.15 b*-50.48
#4 Control Print  Acuity LED 1600 II
L*51.95 a*65.71 b*34.51  L*50.47 a*66.07 b*34.39
#5 Control Print  Acuity LED 1600 II
L*91.29 a*6.03 b*5.47  L*90.73 a*5.12 b*2.21
#6 Control Print  Acuity LED 1600 II
L*71.73 a*22.60 b*34.87  L*69.70 a*20.87 b*27.55
Gamut and Density

2D Gamut Comparison with Adobe® RGB and Coated GRACol2006 (known industry specifications). Acuity LED 1600 II gamut built by printing the IT8.7-4 CMYK Random test chart on FujiFilm Poster Paper at 900x800 dpi using Caldera’s RIP with the Rendering intent set to Perceptual and input targets set to AdobeRGB(1998) and CalderaCMYK. The paper white was measured at L*95,23 a*1.19, b*-4.34. For reference purposes The L* value represents a white value in darkness and lightness. The higher the number, the whiter the paper. The a* value represents almost no cast on the green/red axis, and the b* value represents a slight blue cast on the blue/yellow axis.

The color managed gamut shows how this model printer ships to the end-user with the RIP software and color management settings determined by the manufacturer and described above.

Print Speeds for Bi-Directional Printing

The SGIA test image was run across the width of the media for an image size of 52.82” x 35.21” or 13 f².

Resolution pass/drop size time to print Speed in f²*
900x800 dpi (16 pass / Std.) 6:54 113 f²/hour
900x800 dpi (6 pass / Express) 2:45 284 f²/hour

White Ink Evaluation

Black PVC Substrate L*15.17 a*-0.12 b*-0.53
White Ink printed L*87.95 a*-2.94 b*-2.31

Visual Evaluation of 6 pt. type

This image is from a 10x digital microscope. The test results are from an individual printer that has been calibrated as directed by the manufacturer and run by an expert operator. The images are 6 pt. yellow type on a Cyan and Magenta background (Blue), 6 pt. Cyan type on a Magenta and Yellow background (Red), 6 pt. yellow type on a Cyan and Yellow background (Green), and finally a knock-out from Pantone Process black ink.

Cross hatch from print registration mark shown CMYK on white background and then the Bas Relief dot structure using the 20x digital microscope. Also shown is bas relief of media with no print to show the effect the media may play on reproduction of fine detail.

Gray Ramp

The 50% Black is read and LAB values are reported below.

L*56.64 a*-0.96 b*-5.80

Density and Spectral Readings of 100% CMYK (color managed)

Wedges of 100% Cyan, Magenta, Yellow, and Black were read for density and L*a*b* values.

<table>
<thead>
<tr>
<th></th>
<th>Density</th>
<th>L*</th>
<th>a*</th>
<th>b*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyan</td>
<td>1.41</td>
<td>50.85</td>
<td>-25.73</td>
<td>-52.12</td>
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<tr>
<td>Magenta</td>
<td>1.48</td>
<td>45.33</td>
<td>68.84</td>
<td>-7.54</td>
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<tr>
<td>Yellow</td>
<td>0.97</td>
<td>86.30</td>
<td>-6.27</td>
<td>86.63</td>
</tr>
<tr>
<td>Black</td>
<td>1.80</td>
<td>13.56</td>
<td>-0.97</td>
<td>-0.75</td>
</tr>
</tbody>
</table>

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Service/Warranty Package
The Acuity LED 1600 II comes with a one-year parts and labor limited warranty. Service is performed by trained FUJIFILM Technical Support (FTS) technicians.

Training and Support
Installation includes the full installation of the printer and training on the operation of the printer. Installation is typically a 3 day process.

Initial training consists of the basics of printer operation and suggested maintenance to be performed on the Equipment. RIP software training occurs after the installation of the printer.

The FTS Call Center and parts inventory are located at Fujifilm’s Hanover Park, IL facility which can be reached by calling 800-359-3854 (800-FLY-FUJI). Telephone Support is available from 7 a.m. to 7 p.m. CST, Monday-Friday. On-site hardware support is available from 8 a.m. to 5 p.m. local time, Monday-Friday. FTS maintains a dedicated team of trained field engineers located throughout North America to service the equipment.

For More Information:
FUJIFILM North America Corporation, Graphic Systems Division
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Hanover Park, IL 60133
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Digital Equipment Evaluation Reports are produced by the Specialty Graphic Imaging Association in order to provide an objective comparison tool for companies utilizing wide-format digital imaging equipment. Equipment is evaluated in controlled conditions using a qualified operator and a representative of SGIA, who works as an objective observer and recorder of findings.

A special thanks to X-rite for providing the i1 Pro2 Spectrophotometer, and the Exact Spectrophotometer for taking the necessary measurements in these evaluations. Also thank you to Color*Metrix for the use of ProofPass verification software, which was used to validate the Epson 7800 reference print.

If you have questions about this report or any of the data, please e-mail sgia@sgia.org and reference Acuity LED 1600 II in the subject line.

Prices listed in this report are subject to change.