Digital Equipment Evaluation Report

Fujifilm Acuity F

Description of Machine
The Acuity F is a UV Flatbed printer with 6 or 7 color channels offering a white ink option and prints at speeds up to 1,668 square feet an hour. The Acuity F uses greyscale print heads for high image quality. It has a large 98.4” x 120” bed size with 7 vacuum zones and a pin registration system. The Acuity F is equipped with an Automated Maintenance System (AMS) that cleans the device’s print heads in less than 25 seconds per color, ensuring that the nozzles are clean and ready to print at any time. Using Fujifilm’s unique Micro-V ultrafine dispersion technology to maximize pigment loading, the Uvijet range of UV curing inks delivers strong vibrant, lightfast colors with superior color gamut.

Specifications
Height: 58 in. (147 cm)
Width: 225 in. (571 cm)
Depth: 190 in. (482 cm)
Weight (w/stand): 4,001 lbs. (1,815 kg)
Country of Manufacture: Canada

Print Width/Print Dimensions
Max Print Width: 120 in. (3.05 m)
Max Print Length (Rigid): 98.4 in. (2.5 m)
Max Media Thickness (for printing): 2 in. (50.8 mm)
Max Weight: 77 lbs. (35 kg)

Number of Colors (6 or 7 channels)
CMYK lc lm White

Printing Resolutions/Modes
Express
Production
Product Matte
Quality
Quantity Matte
Quality Smooth
Quality Density
Quality 2 Layer (White)
Quality 3 Layer (White)

Operating Environment/Connectivity
Ambient temp.: 64˚F to 86˚F (18˚C to 30˚C)
Max. humidity: 30-70% RH, non-condensing
Ethernet 10/100/1000 Base T

Features
• Dedicated flatbed
• Large 120” x 98.4” bed
• 7 vacuum zones
• Pin registration
• Up to 1668 ft2/hr
• Dual beds for continuous printing
• High efficiency UV curing
• Automatic maintenance station
• High resolution greyscale printheads
• Light inks for optimal quality at high speed

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 ColorGATE Production Server V. 10 or later. Compatible with Caldera GrandRIP V. 11 or later.

Ink Capacity and Cost (MSRP)
2 L pouch $ Contact Manufacturer

Options and Cost (MSRP)
• White Ink $ Contact Manufacturer

Print Head
Toshiba Tec CE-2 6-42 pl variable drop
6 print heads per channel
Replacement cost (out of warranty) $ Contact Manufacturer

Power and Venting Requirements
3 phase, 200-240 VAC 50/60 Hz 30 A (delta)
Compressed Air max 120 psi / 867 kPa
Peak flow 12 ft³/m at 100 psi or 340 ltr/m at 690 kPa

Manufacturer’s Suggested Retail Price
Acuity F $ Contact Manufacturer
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September 2017

Print Quality Tests
The SGIA test image was printed on the Acuity F using WestRock Tango 10 pt. C2S at 720x1080 dpi. RGB input profile set to AdobeRGB 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 F)

#1 Pantone Spot Colors*  \( \Delta E \)

<table>
<thead>
<tr>
<th>Pantone</th>
<th>( \Delta E )</th>
</tr>
</thead>
<tbody>
<tr>
<td>185C</td>
<td>4.27</td>
</tr>
<tr>
<td>300C</td>
<td>1.15</td>
</tr>
<tr>
<td>512C</td>
<td>0.42</td>
</tr>
<tr>
<td>375C</td>
<td>3.91</td>
</tr>
<tr>
<td>7548C</td>
<td>6.67</td>
</tr>
<tr>
<td>165C</td>
<td>5.22</td>
</tr>
<tr>
<td>102C</td>
<td>3.56</td>
</tr>
<tr>
<td>297C</td>
<td>2.23</td>
</tr>
</tbody>
</table>

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

#2 Neutral Gray Density (Absolute)
Cyan density of 0.56; Magenta density of 0.57; 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 measured in mL (Control Print 24x36 printed 2-up)
C .47 M .49 Y 1.4 K .51 Lc .88 Lm 1.23

Spectral Evaluations (L*a*b* comparison)

#3 Control Print  Acuity F

<table>
<thead>
<tr>
<th>L<em>a</em>b*</th>
<th>Acuity F</th>
<th>Acuity F</th>
</tr>
</thead>
<tbody>
<tr>
<td>L<em>30.29 a</em>6.15 b*-47.98</td>
<td>L<em>28.48 a</em>5.79 b*-43.55</td>
<td></td>
</tr>
<tr>
<td>L<em>51.95 a</em>65.71 b*34.51</td>
<td>L<em>50.82 a</em>62.36 b*32.70</td>
<td></td>
</tr>
<tr>
<td>L<em>91.29 a</em>6.03 b*5.47</td>
<td>L<em>90.06 a</em>5.69 b*-0.13</td>
<td></td>
</tr>
<tr>
<td>L<em>71.73 a</em>22.60 b*34.87</td>
<td>L<em>69.18 a</em>22.77 b*26.36</td>
<td></td>
</tr>
</tbody>
</table>

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Gamut and Density
2D Gamut Comparison with Adobe® RGB and Coated GRACol2006 (known industry specifications). Acuity F gamut built by printing the IT8.7-4 CMYK Random test chart on WestRock Tango C2S 10 pt at 720x1080 dpi (4 pass Production mode) using Caldera’s Grand RIP with the Rendering intent set to Perceptual and input targets set to AdobeRGB(1998) and CalderaCMYK. The paper white was measured at L*93.91 a*=1.71, b*-5.66. 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 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 96" x 48" or 32 f².

<table>
<thead>
<tr>
<th>Resolution</th>
<th>pass/drop size</th>
<th>time to print</th>
<th>Speed in f²/hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>2:10</td>
<td>886 f²/hour</td>
<td></td>
</tr>
<tr>
<td>Express</td>
<td>1:28</td>
<td>1,309 f²/hour</td>
<td></td>
</tr>
</tbody>
</table>

*square feet per hour based on image size

White Ink Evaluation
Black PVC Substrate L*15.48 a*-0.32 b*-0.58
White Ink printed L*84.14 a*-2.97 b*-4.38

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*57.59 a*1.33 b*-2.40

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>Color</th>
<th>Density</th>
<th>L*</th>
<th>a*</th>
<th>b*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyan</td>
<td>1.28</td>
<td>51.73</td>
<td>-26.63</td>
<td>-46.33</td>
</tr>
<tr>
<td>Magenta</td>
<td>1.45</td>
<td>45.66</td>
<td>66.20</td>
<td>-5.46</td>
</tr>
<tr>
<td>Yellow</td>
<td>0.90</td>
<td>85.11</td>
<td>-5.22</td>
<td>80.00</td>
</tr>
<tr>
<td>Black</td>
<td>1.76</td>
<td>14.65</td>
<td>1.39</td>
<td>-1.09</td>
</tr>
</tbody>
</table>
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Fujifilm Acuity F

Service/Warranty Package
The Acuity F 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 5-7 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:
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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-rile 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 F in the subject line.

Prices listed in this report are subject to change.