FD-7 / FD-5

3-in-1 next-generation measurement tool

Streamlines color adjust in printing, even on substrates with fluorescent whitening agents.

Main specifications

**FD-7**

- **Density measurement functions**
  - Density, density difference
  - 3rd gain
  - Trap gain
  - PS plate dot gain
  - Spot color density
  - Gray balance
  - Motif detection
  - ISO 12647 check

- **Colorimetric measurement functions**
  - L*a*b*
  - L\(^*\)
  - Hunter Lab
  - T\(^*\)
  - X\(^*\), Y\(^*\), Z\(^*\)
  - CM* (CE1978)
  - E\(^*\)\(_{c}\), E\(^*\)_\(H\)
  - E\(^*\) (Hunter)
  - **Colorimetric measurement functions**
  - **Spectrophotometer functions**
  - Spectral reflectance
  - Color calibration
  - 3-in-1 next-generation measurement tool

- **Other functions**
  - Manual scan
  - Automatic function (identity, dot area, color)

- **Software**
  - SpectraMagic NX

- **Other company names and product names used herein are trademarks or registered trademarks of their respective companies.**

**FD-5**

- **Density measurement functions**
  - Density, density difference
  - 3rd gain
  - Trap gain
  - PS plate dot gain
  - Spot color density
  - Gray balance
  - Motif detection
  - ISO 12647 check

- **Colorimetric measurement functions**
  - L*a*b*
  - L\(^*\)
  - Hunter Lab
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  - CM* (CE1978)
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  - **Colorimetric measurement functions**
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  - Spectral reflectance
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- **Other functions**
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**Color**

The world’s first measuring instrument that corresponds to Measurement Condition M1 of ISO 13655

- Konica Minolta’s original VFS (Virtual Fluorescence Standard) technology enables L*a*b* measurements corresponding to ISO 13655 Measurement Condition M1.
- The FD-7 and FD-5 can take measurements corresponding to all four of the ISO 13655 Measurement Conditions. Measurements corresponding to M1 are enabled by Konica Minolta’s original VFS (Virtual Fluorescence Standard) technology, and measurements corresponding to M0 (CE illuminant A) and M2 (illumination with UV-cut filter) can also be taken. In addition, by attaching the included polarization filter, measurements corresponding to M3 (M2+ polarization filter) can be taken.

**Spectral output (FD-7 only)**

- When the FD-7 is connected to a computer, the spectral reflectance data (380 to 730 nm) of samples under various illuminants and the spectral irradiance data (360 to 730 nm) of the environmental lighting can be measured and output to a computer. This makes the FD-7 ideal for research and development applications.

**FD-7 (Master body)**

- Manual scan measurements can be performed when the instrument is connected to a PC.

**[Image 288x243 to 457x412]**

**Illumination environment light can be measured. (FD-7 only)**

- The illuminance* and color temperature in a color viewing cabinet or the actual ambient light under which printed materials will be evaluated can be measured.

**Measured environmental light can be set as illumination light source (user-defined illuminant)**

- In the past, when measuring printed materials containing fluorescent whitening agents (FWA), large differences between measured values and visual evaluation sometimes occurred. But with the FD-7, colorimetric values can be calculated under the measured environmental light source, providing results which more closely correspond to on-site visual evaluation. This ensures customers receive the colors they want and eliminates time and labor lost resolving customer complaints due to the effects of FWA or metamerism.

**[Image 847x477 to 1154x628]**

**Density**

**Printing quality control functions including trapping, dot gain, etc.**

- A new industry-standard tool for commercial printing and packaging printing to improve productivity and quality at low cost.
  - CMYK density • Dot area • Dot gain • Trapping • Simple density difference
  - PS plate dot area • PS plate dot gain • Spot color density

**FD-5 (Working body)**

- By measuring the environment light with an FD-7 master body and then transferring multiple FD-5 or FD-7 illuminations, the user illuminant data to working bodies, color control using the same illumination light source at which measurements can be achieved. In addition, the compensation function minimizes inter-instrument errors when using multiple instruments.

**Data management Software FD-S1w (included as stand accessory)**

**Features:**
- Transfer of measurement data to Excel® sheet.
- Reading/registration from instrument and storage as PC file.
- Color set management and storage as PC file.
- Calculation of measurement data to enable ISO 13477 Check and Target Match functions.

**System Requirements**

- Processor: Intel® Pentium® 4 2.8GHz or higher
- Memory: 1GB or more
- Hard Disk: 4GB or more
- Display: 1,024x768 pixels or more.
- Software: Excel®, Word®, PowerPoint®, Photoshop®

**Compatibility**

- Windows® 10 (32-bit, 64-bit), Windows® 8.1 (32-bit, 64-bit), Windows® 7 (32-bit, 64-bit)
- Adobe® Reader® 10 or higher.

**Use of software:**

- Excel®, Word®, PowerPoint®
- Adobe® Reader® 10 or higher.

**Target Match function**

- Displays the color difference from the target color and the process color or spot color density adjustment needed to bring the measured color closer to the target color.
- By using the Target Match function, ink color adjustment can be performed without a computer or special software.
  - Ideal for spot colors or process colors.
  - Displays color difference and density.
  - Displays estimated density adjustment needed to bring the measured color closer to the target color and the predicted color difference after adjustment.

**Functions corresponding to various printing standards**

- Pass/fail judgment against ISO, JapanColor, GRACoL®, SWOP®, PSO, or user-defined custom targets can be performed. The FD-7 and FD-5 are ideal for on-site printing quality control.
  - ISO 12647 check
  - CMYK density, spot color density
  - Dot area, dot gain
  - Trapping, simple density difference
  - PS plate dot area, PS plate dot gain

**Gray balance**

- Gray balance can be evaluated using the G7® evaluation method.
- By using the Target Match function, ink color adjustment can be performed without a computer or special software.
  - Ideal for spot colors or process colors.
  - Displays color difference and density.
  - Displays estimated density adjustment needed to bring the measured color closer to the target color and the predicted color difference after adjustment.

**[Image 672x376 to 777x472]**

*1 Simple illuminance measurement function. Does not conform to JIS standards.
*2 Target colors (color sets) must be set using the included FD Data Management Software FD-S1w.
*3 Backing conversion function converts the target values to enable evaluation even when backing conditions for samples do not match those of the targets.
Industry’s first automatic wavelength compensation function

- Wavelength compensation is performed during white calibration \(^3\) without requiring additional work.
- Until now, wavelength compensation could only be carried out as one part of manufacturer servicing. This task is now performed whenever white calibration \(^3\) is done, helping to maintain the high reliability of measurement values until the next periodic servicing.

\(^*3\) Except when polarization filter is attached.

World’s lightest \(^2\)

- The main body weighs only about 350g, and even with the target mask attached it’s only about 430g, lighter than any previous spectrophotometers.
- This reduces the load on the user’s arm during work, improving efficiency when taking measurements over a long time.

\(^*2\) Display-equipped spectrophotometer. As of December 1, 2012

Worry-free after-sales service

- Worldwide service centers provide rapid support when needed.
- A comprehensive service network is in place to ensure that your instrument is always in top shape.

Optional accessories

XY Automatic Color-Measurement Stage ColorScout series \(^3\)

The ColorScout series enables accurate, high-efficiency measurements of color charts with the Spectrophotometer FD-7 and FD-5. It enables automatic positioning and measurement of the instrument, providing higher repeatability and reducing labor compared to manual measurements.

Capabilities of both spot and scan measurements!

- Supports A3+ and A4+ sizes. Measurements can be efficiently done without cutting, folding and switching in and out important color charts.
- Definitions files can be easily created for charts using the ClrChrt application that comes standard with the product.
- Data can be saved in ANSI8.7 or CGATS.5 format and exported to profile editing software. Colors can be reproduced closer to what is perceived with the human eye, by using M1 light sources or user-defined light sources.
- The ES series uses electrostatic attraction to immobilize charts during measurement.

Color Data Software SpectraMagic NX \(^3\)

Ideal for color-difference control of spot colors relative to target colors.

Achieves overall ease of use with free selection of evaluation equations and report formatting.

With the new E* and Eo color difference equations as well as a user index that allows users to freely set their own evaluation equations, SpectraMagic NX can meet a wide variety of user needs.

Measurement data can be displayed in list form or in objects such as spectral graphs, color-difference graphs, etc. that the user can freely lay out, and those objects can be copied and pasted as is into other software such as Excel® for easy data control. In addition, printing screens can also be designed using the same objects to create user-defined formats for easy-to-read reports.

Minimum Computing Requirements

<table>
<thead>
<tr>
<th>Specification</th>
<th>ColorScout A3+</th>
<th>ColorScout A4+</th>
<th>ColorScout A4+ ES</th>
<th>ColorScout A4+ ES</th>
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<tr>
<td>OS, CPU</td>
<td>Windows® XP Pro 32-bit, 64-bit</td>
<td>Windows® 7 32-bit, 64-bit</td>
<td>Windows® 7 32-bit, 64-bit</td>
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<td>Hard disk Memory</td>
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<td>30MB or more available disk space; 64MB or more</td>
<td>30MB or more available disk space; 64MB or more</td>
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</tr>
</tbody>
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System Diagram