Streamlines color adjustment in printing, even on substrates with fluorescent whitening agents
A high-accuracy, compact, lightweight, handheld, next-generation spectrodensitometer that measures color, density, and illumination* for applications from R&D to quality control.

*FD-7 only

**Data Management Software FD-S1w (included as standard accessory)**

**Features:**
- Transfer measurement data to Excel sheet
- Reading/registration from instrument and storage in Excel database management software
- Color set management for instrument and Target Match functions

**System Requirements**

- Windows® 7 Professional
- Windows® 7 Ultimate
- Windows® 7 64-bit
- Windows® 7 SP1
- Windows® 8.1
- Windows® 8.1 64-bit
- Windows® 8
- Windows® 8 64-bit
- Excel 2010 64-bit (Windows® 7)
- Excel 2010 32-bit (Windows® 8)

**Compatible Instruments**

- Spectrodensitometer FD-7, FD-5
- *FD-7 only

**Display language**

- English, Japanese

**Development**

- Konica Minolta, Inc.

**Compatibility with**

- ISO 13655 Measurement Condition M1
- ISO 13655 Measurement Condition M2
- ISO 13655 Measurement Condition M3

**Accuracy**

- ±2% (Velocity No. 1, 28a/6, 35a/6, 00/0, 100%/100%)

**Colorimetric values**


**Density values**

- K1, K2, K3, K4, K5, K6, K7, K8

**Illumination**

- Manual scan measurements can be performed (FD-7 only)

**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 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.

**Scan measurements can be performed. (FD-7 only)**

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

- With optional software basicColor catch all, the colorimetric values, density values, and spectral reflectance values of various test charts (MediaWedge EC12002, IT8.7/3, etc.) can be measured in a single operation.

**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 (380 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.

**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

**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 10847 check.**

- Color difference, TVI, and mid-tone spread can be evaluated.

- Gray balance

- Gray balance can be evaluated using the G7® evaluation method.

**FD-7**

- Master body

**FD-5**

- Working body

---

*FD-7 only

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

World’s lightest \(^4\)

- The main body weighs only about 350g, and even with the target mask attached it’s only about 430g, lighter than any previous spectrophotometer.
- This reduces the load on the user’s arm during work, improving efficiency when taking measurements over a long time.
- \(^4\) 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**

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 reproducibility 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 Management Software

basICColor series \(^5\)

- The software contains interfaces for all models of the FD series and enables users to handle everything from measuring colors to creating, analyzing and managing the quality (pass/fail judgment) of ICC profiles.
- For major efficiency increases in daily color control work:
  - Enables color measurement, ICC profile creation, and quality control (pass/fail evaluation and certification).
  - Incorporates a variety of profile evaluation functions, such as tone curves for 2D/3D color gamuts and 
    
    E* comparison and display, and supports functions that improve profile quality (measurement data smoothing, duplicate patch correction, defect [measured value] correction).
  - Enables profile creation with multi-channel data (seven colors at most) having more colors than CMYK full color as well as normal measurement and normal profile creation.
  - Supports device link profile creation, editing, and evaluation. Can automatically create and output PDF reports.

Color Data Software SpectraMagic NX \(^6\)

- 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* \(^4\) and E0 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. and can be copied and pasted to 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.

Optional accessories

**XY Automatic Color-Measurement Stage**

**ColorScout series** \(^3\)

**ClrChrt software (Included)**

- Measurement data
- Chart design screen

**ColorChart 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 ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrostatic attraction</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Measureable sizes</td>
<td>210 x 460 mm</td>
<td>210 x 460 mm</td>
<td>210 x 210 mm</td>
<td>210 x 210 mm</td>
</tr>
<tr>
<td>Sample thickness</td>
<td>Max 1.5 mm</td>
<td>Max 1.0 mm</td>
<td>Max 1.0 mm</td>
<td>Max 1.0 mm</td>
</tr>
</tbody>
</table>

**System Diagram**

USB Cable (Shape may vary by region)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IF-A17 (Europe)</td>
<td>IF-A23 (worldwide except Europe)</td>
<td>IF-A56 (worldwide except Europe)</td>
</tr>
</tbody>
</table>

**Data Management Software**

- basColor Print requires OS X 10.9.5 or above.

**Minimum computing requirements**

<table>
<thead>
<tr>
<th>OS</th>
<th>Operating System</th>
<th>Processor</th>
<th>Memory</th>
<th>Hard disk</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS</td>
<td>Windows* 7/8/8.1/10</td>
<td>Intel® 11th/10th Gen. Core™ i7/i5/i3/10th Gen. Core™ i7/i5/i3</td>
<td>8GB or more</td>
<td>512GB or more</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel® Pentium 4-Processor</td>
<td>4GB</td>
<td>256GB or more</td>
<td></td>
</tr>
</tbody>
</table>

**Minimum computing requirements**

<table>
<thead>
<tr>
<th>OS</th>
<th>Operating System</th>
<th>Processor</th>
<th>Memory</th>
<th>Hard disk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Edition</td>
<td>Windows* 7/8/8.1/10</td>
<td>Intel® 11th/10th Gen. Core™ i7/i5/i3/10th Gen. Core™ i7/i5/i3</td>
<td>8GB or more</td>
<td>512GB or more</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel® Pentium 4-Processor</td>
<td>4GB</td>
<td>256GB or more</td>
<td></td>
</tr>
</tbody>
</table>

* Measurements with polarization filter attached cannot be performed.
### Main specifications

<table>
<thead>
<tr>
<th>Function</th>
<th>FD-7</th>
<th>FD-5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Density measurement functions</strong></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Density, density difference</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Dot area</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Dot gain</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Trapping</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>PS plate dot area</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>PS plate dot gain</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Spot color density</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Gray balance</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Illuminance measurement functions</td>
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<tr>
<td>Illuminance</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Correlated color temperature</td>
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<td>•</td>
</tr>
<tr>
<td><strong>Colorimetric measurement functions</strong></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>L'ab*</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>L’Ch*</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Hunter Lab</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Yxy</td>
<td>•</td>
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</tr>
<tr>
<td>XyZ</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>E'ab* (CIE1976)</td>
<td>•</td>
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</tr>
<tr>
<td>E’94* (CIE1994)</td>
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<td>•</td>
</tr>
<tr>
<td>E’00 (Hunter)</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>CMC (10)</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td><strong>Spectral reflectance</strong></td>
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</tr>
<tr>
<td>Spectral data output</td>
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<td>•</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
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</tr>
<tr>
<td>Target density</td>
<td>30</td>
<td>30</td>
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<tr>
<td>Target color</td>
<td>30</td>
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</tr>
<tr>
<td>Color sets of 15 colors each*</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td><strong>Other functions</strong></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Manual scan*</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Automatic function (dev., dot area, color)</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>PASS/FAIL judgment</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>bascColor series</td>
<td>•</td>
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<tr>
<td>FD-S1w</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>SpectraMagic NX</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>ClrChrt (Included with ColorScout series)</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

*1 Used for ISO 12647 Check / Target match; Must be set using included FD-S1w software.
*2 Available when using PC software.
*3 A 5 illumination for wavelengths below 400 nm is unidirectional.

### SAFETY PRECAUTIONS

For correct use and your safety, be sure to read the instruction manual before using the instrument.

- Always connect the instrument to the specified power supply voltage. Improper connection may cause a fire or electric shock.

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https://konicanolta.com/instruments/network

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