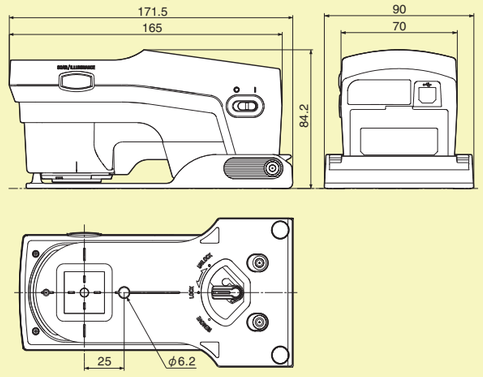
Main specifications

Model	FD-7	FD-5
Illumination/viewing system	45°a: 0°(annular illumination)*1 Conforms to CIE No. 15, ISO 7724/1, DIN5033 Teil 7, ASTM E 1164, and JIS Z 8722 Condition a for reflectance measurements.	
Spectral separation device	Concave grating	
Wavelength range	Spectral reflectance: 380 to 730 nm; Spectral irradiance: 360 to 730 nm	Spectral reflectance: 380 to 730 nm
Wavelength pitch	10 nm	
Half bandwidth	Approx. 10 nm	
Measurement area	Ø3.5mm	
Light source	LED	
Measurement range	Density: 0.0D to 2.5D; Reflectance: 0 to 150%	
Short-term repeatability	Density: σ0.01D Colorimetric: Within σΔE00 0.05 (When white plate is measured 30 times at 10-second intervals after white calibration has been performed)	
Inter-instrument agreement	Within ΔE00 0.3 (Average of 12 BCRA Series II color tiles compared to values measured with a master body under Konica Minolta standard conditions)	
Measurement time	Approx. 1.4 s (single-point reflectance measurement)	
Displayed values	Colorimetric values, color-difference values, density values, density-difference values, dot area ratio, dot gain, PASS/FAIL judgment, illuminance, correlated color temperature	Colorimetric values, color-difference values, density values, density-difference values, dot area ratio, dot gain, PASS/FAIL judgment
Measurement conditions	Corresponding to ISO 13655 Measurement Conditions M0 (CIE Illuminant A), M1 (CIE Illuminant D50), and M2 (illumination with UV-cut filter); User-defined illuminant	
Illuminants	A, C, D50, D65, ID50, ID65, F2, F6, F7, F8, F9, F10, F11, F12, User-defined illuminant	
Observers	2° Standard Observer, 10° Standard Observer	
Color spaces	L*a*b*, L*C*h, Hunter Lab, Yxy, XYZ and color-difference in these color spaces	
Color-difference equations	ΔE*ab (CIE 1976), ΔE*94 (CIE 1994), ΔE00 (CIE 2000), ΔE (Hunter), CMC (l:c)	
Indexes	WI (ASTM E313-96); Tint (ASTM E313-96); ISO Brightness (ISO 2470-1); D65 Brightness (ISO 2470-2); Fluorescence index	
Density	ISO Status T, ISO Status E, ISO Status A, ISO Status I; DIN16536	
Storable data	Colorimetric target data: 30 data; Density target data: 30 data	
Display language	English, French, German, Spanish, Japanese, Chinese (Simplified)	
Scanning measurements*2	Scanning measurement of a color chart can be performed.	N/A
Interface	USB 2.0	
Output data*2	Displayed values; Spectral reflectance data; Spectral irradiance data	Displayed values
Power	Rechargeable internal lithium-ion battery (Number of measurements per charge: Approx. 2,000 when new); AC adapter; USB bus power	
Dimensions (W × D × H)	70 × 165 × 83mm (Body only); 90 × 172 × 84mm (With target mask attached)	
Weight	Approx. 350g (Body only); Approx. 430g (With target mask attached)	
Operating temperature/ humidity range	10 to 35°C, 30 to 85% relative humidity with no condensation	
Storage temperature/humidity range	0 to 45°C, 0 to 85% relative humidity with no condensation	

*1 Illumination for wavelengths under 400nm is unidirectional. *2 Available when using PC software.

DIMENSIONS (Units: mm)

With removable target mask attached



- Displays shown are for illustration purpose only.
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SAFETY PRECAUTIONS

For correct use and for 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.

Certificate No : LRQ 0960094/A
Registration Date : March 3, 1995

Certificate No : JQA-E-80027
Registration Date : March 12, 1997

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http://konicaminolta.com/instruments/about/network

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9242-4897-10 BCJEPK⑤

KONICA MINOLTA

Spectrodensitometer FD-7/FD-5

3-in-1 next-generation measurement tool

Color
Density
Illumination

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

Giving Shape to Ideas

3-in-1 lightweight, handheld spectrodensitometer that measures color, density, and illumination.

L*a*b* CMYK Lv, Tcp (Color temperature)

An ideal instrument for the printing and digital-imaging industries.

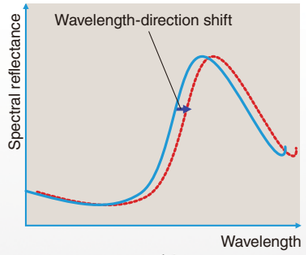
Color

Uniquely corresponds to Measurement Condition M1 of ISO 13655

The world's first M1 type. Konica Minolta's original VFS (Virtual Fluorescence Standard) technology enables L*a*b* measurements corresponding to ISO 13655 Measurement Condition M1 (CIE Illuminant D50).
In addition, color measurements corresponding to ISO 13655 Measurement Conditions M0 (CIE Illuminant A) and M2 (illumination with UV-cut filter) can also be taken.

Industry's first automatic wavelength compensation function

- Wavelength compensation is performed during white calibration 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 is done, helping to maintain the high reliability of measurement values until the next periodic servicing.

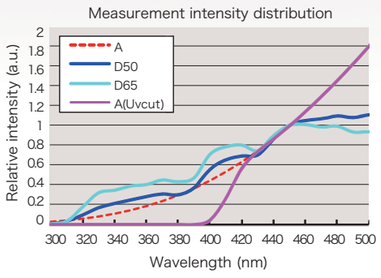


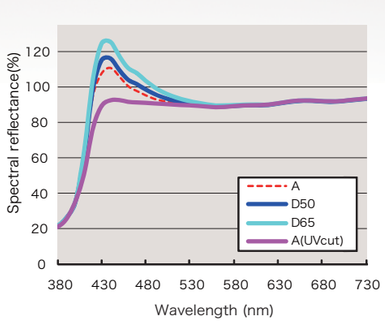
Scan measurements can be performed.*1

- 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 ECI2002, IT8.7/3, etc.) can be measured in a single operation.

Enables color measurements that correspond more closely with visual evaluation.

When using conventional instruments to measure materials printed on substrates containing fluorescent whitening agents (FWA), large differences between the results of measurements and visual evaluation may occur. With the new FD-7/FD-5, measurement results correspond more closely to visual evaluation results, including the effects of any FWA in the paper.





Spectral output*1

Since both spectral reflectance data (380 to 730 nm) under various light sources and spectral irradiance data (360 to 730 nm) of environmental lighting can be measured and output to a computer, it makes the FD-7 ideal for research and development applications.

*1: Function available only on FD-7.

Long-life LED lamp light source

Density

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 spectrodensitometer.
- This reduces the load on the user's arm during work, improving efficiency when taking measurements over a long time.

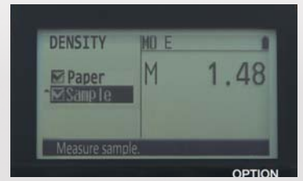
*2 Display-equipped spectrodensitometer.
As of November 1, 2010

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.

Simple operation

- Measurements of density, dot area ratio, dot gain, color, and illumination are simple.
- Instructions in the LCD screen guide operation, so anyone can take measurements easily.

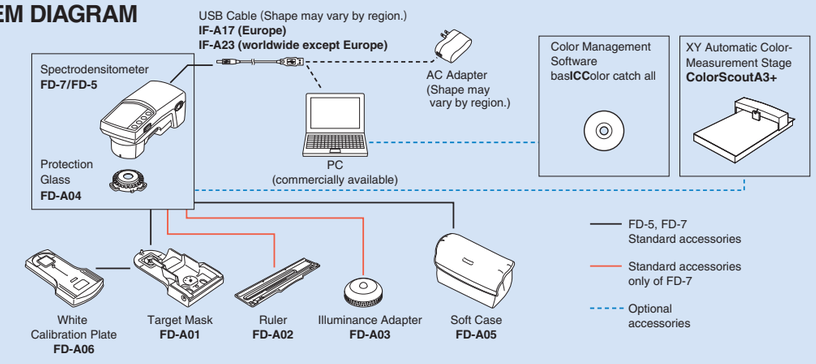


Illumination

Illumination environment light can be measured.*1

- 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.
- Colorimetric values under the measured light source (which more closely correspond to on-site visual evaluation) can be calculated. This ensures customers receive the colors they want and eliminates time and labor lost resolving customer complaints.

SYSTEM DIAGRAM



Color Management Software
basICColor catch all (Optional accessory)

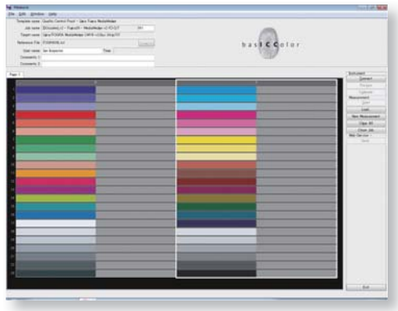
For major efficiency increases in daily color control work.

Enables color reproduction closer to visual evaluation with simple operation.

- With bas**ICC**olor catch all, commonly used templates and jobs are already included, so there is no need for measurement preparations such as setting target values, tolerances, etc.
- When the software is started, just select the required measurement conditions in the Job Management screen. You can then connect immediately to the Spectrodensitometer FD-7 or FD-5, and PDF reports can be created and output automatically.
- Data is stored in ISO format (ISO 12642-2), so they can be fed back to profile creation software. Since the FD-7 and FD-5 are the industry's first spectrodensitometers to offer M1 measurement condition, color reproduction closer to visual evaluation becomes possible.

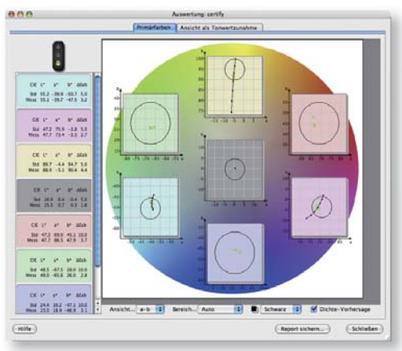
Measure various types of standard color charts to easily check whether proof and printed colors are within offset printing standards.

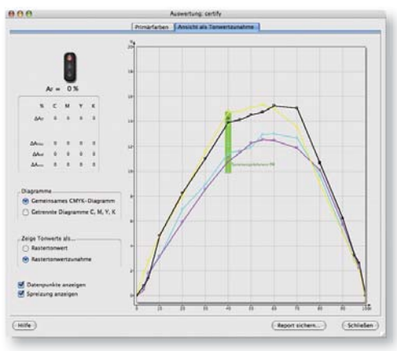
- When the FD-7 is used, scan measurements (which were impossible with conventional spectrodensitometers) can be taken, so data from multiple color patches can be obtained in one operation.
- Pass/Fail judgement results can be seen at a glance.
- Stricter in-house company tolerances or standard tolerance values specified by customers can be set and the results of pass/fail judgements based on those tolerances can be easily seen.
- Three-dimensional color solid display enables easy checking of color shifts.
- Target colors can also be created from ICC profiles.



For ISO 12647-2 printing certification checks and print process quality management.

- Enables measurement of Fogra and IDEAlliance standards and certification checking.
- In addition to CIELAB for color, evaluation results for CMYK dot gain and mid-tone spread as required for the above certification checking can also be easily obtained. This can help discover and resolve problems in the printing process at an early stage.





Templates/targets for use with Spectrodensitometer FD-7/FD-5	
For proof checking and QA	Various types of Ugra/Fogra MediaWedge CMYK; Various types of IDEAlliance Digital Control Strip 2009
For printing certification and QC	Various types of FOGRA Stepwedge; IDEAlliance P2P25X
For CMYK printer profile creation	ECI 2002 random; IT8/7-4 random; IT8/7-3 random; bas**ICC**olor CMYKick-Target7
For RGB printer profile creation	TC9.18; Various types of bas**ICC**olor dropRGB Target
Minimum computing requirements	
OS	Windows® XP SP3 (32-bit); Windows® Vista (32-bit); Windows® 7 (32-bit)
CPU	Intel® Pentium® 4 Processor
Memory	512MB
Hard disk	At least 100MB of available disk space
Display	Display unit capable showing at least 1024 x 768 dots/24-bit color (16 million colors)
Other	DVD-ROM drive (for installation) USB 2.0 port (for instrument connection) Microsoft Internet Explorer Ver. 7 or later (to obtain license)
Compatible instruments	
	Spectrodensitometer FD-7 and FD-5

Features	
Color notations	CIELAB; CIEXYZ; Density (ISO Status T, ISO Status E, ISO Status A); Dot gain
Color-difference equations	ΔE^*_{ab} (CIE 1976); ΔE^*_{94} (CIE 1994; graphics); ΔE^*_{94} (CIE 1994; textile); ΔE_{00} (CIEDE2000); CMC (l:c); DIN99
Observer	2°; 10°
Observation illuminants	A; B; C; D50; D55; D65; D75; ID50; ID65; E; F1 to F12
Measurement conditions	A (ISO 13655 Measurement Condition M0); C; D50 (ISO 13655 Measurement Condition M1); D65; ID50; ID65; F2; F6; F7; F8; F9; F10; F11; F12; A+UV cut (ISO 13655 Measurement Condition M2); User-defined illuminant
Basic functions	Calibration; Spot measurement; Scan measurement (With FD-7 only); Illumination measurement (With FD-7 only); Job creation/management; Target value setting (reference file, ICC profile); Averaging of multiple measurements; Graph display; Report output (Pass/Fail message setting)
Output items	Sample ID; CMYK or RGB; CIEXYZ: CIELAB: Density (ISO Status T, ISO Status E, ISO Status A); Spectral data (With FD-7 only); Dot gain
Printing control items	Color tolerance range control; Primary color control; Dot gain control; Mid-tone spread control
Printing standards	ISO 12647; FOGRA39, FOGRA27; SWOP; GRACoL
Import/export	Data files: ISO format (ISO 12642-2); PDF report output; Label printing
Display languages	English; German; French; Spanish; Italian; Japanese; Chinese (Simplified)

NEW XY Automatic Color-Measurement Stage
ColorScoutA3+ (Optional accessory)

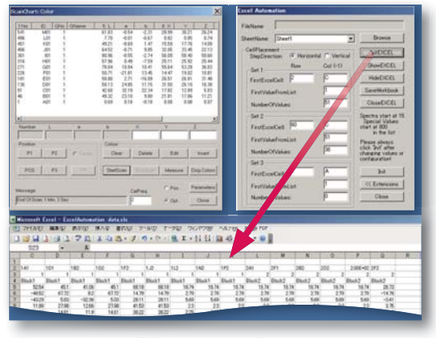
The ColorScoutA3+ enables accurate, high-efficiency measurements of color charts with the Spectrodensitometer FD-7 and FD-5. It enables automatic positioning and measurement of the instrument, providing higher repeatability and reducing labor compared to manual measurements.

XY automatic color-measurement stage.
Table available with either white surface or black surface.

Using the ColorScoutA3+ with the FD-7 or FD-5 makes it easier to measure colorimetric data of color charts under ISO 13655 Measurement Condition M1. Measurement Condition M1 colorimetric data can be used to create color profiles that more closely match visual evaluation.

Maximum measurable chart size of 320 x 460 mm improves measurement efficiency by allowing even large color charts to be measured in a single procedure without the need to cut up or tile the charts.

Measurement of user-designed charts is also possible. The included ColorChart software makes it easy to create a definition file for measuring the user-designed chart.



Measurement data

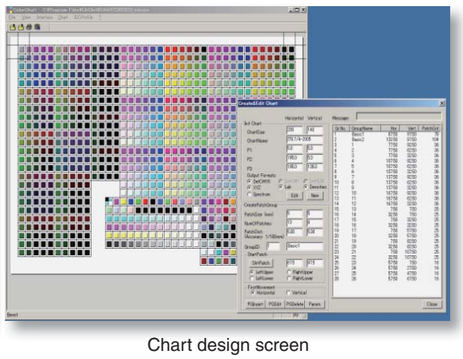


Chart design screen

Main specifications XY Automatic Color-Measurement Stage ColorScoutA3+	
Measurement range (maximum chart size)	320 x 460 mm
Measuring instrument	Spectrodensitometer FD-7, FD-5
Minimum chart patch size	6 x 6 mm
Maximum sample thickness	1.5 mm
Operating temperature/ humidity range	10 to 35°C, relative humidity 30 to 85% with no condensation
Storage temperature/ humidity range	-20 to 60°C, relative humidity 0 to 90% with no condensation
Standard accessories	Mounting bracket for FD-7, Height adjustment plate, ColorChart software, RS-232C cable, USB to RS-232C serial converter, USB cable AC power cord, White calibration plate for ColorScoutA3+
ColorChart minimum computing requirements	
OS; CPU	Windows® XP (32-bit), Windows® Vista (32-bit); 300MHz or faster
Hard disk; Memory	30MB or more available disk space; 64MB or more
Display	1024 x 800 pixels or more