KONICA MINOLTA

NEW

Spectrodensitometer FD-5BT

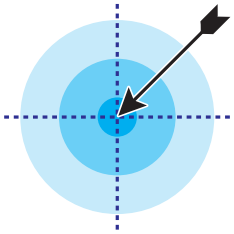
An innovative instrument for the color calibration, control and management of printers

The Spectrodensitometer FD-5BT is equipped with new optical technology that not only offers high accuracy but also leaps ahead of competitors by offering M1 (D50) measurement conditions, providing results that correlate closely with visual evaluation.

Excellent product performance

Demands for high image quality and definition continues to increase in commercial printing. The FD-5BT provides the constant readings and the minimized deviation among the multiple units needed to achieve high color reproducibility.

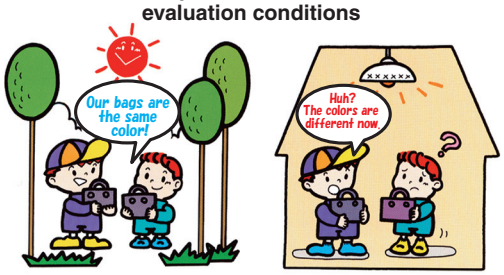
Repeatability : Within ⊿E00 0.05
Inter-instrument agreement : Within ⊿E00 0.3



Greatly reduces differences between visual and instrumental evaluation

One possible cause of differences between the results of visual evaluation and instrumental evaluation is differences between the illumination used for visual evaluation and the illumination used by the instrument for evaluation.
The FD-5 can provide measurement results under various illuminants and measurement conditions. It even offers Measurement Condition M1 (D50), which is recommended in ISO 13655 (Graphic technology - Spectral measurement and colorimetric computation for graphic arts images) as being closest to visual evaluation.

Example of differences in evaluation conditions



Color difference under Illuminant D50 (Daylight)

Sample A	Sample A'
L* = 50.93	L* = 50.93
a* = 4.54	a* = 4.54
b* = -5.12	b* = -5.12

⊿E*ab = 0

Color difference under Illuminant A (Incandescent lamp)

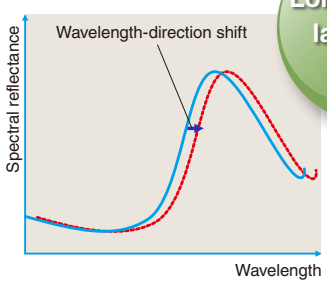
Sample A	Sample A'
L* = 50.94	L* = 53.95
a* = 3.42	a* = 10.80
b* = -5.60	b* = -2.00

⊿E*ab = 8.71

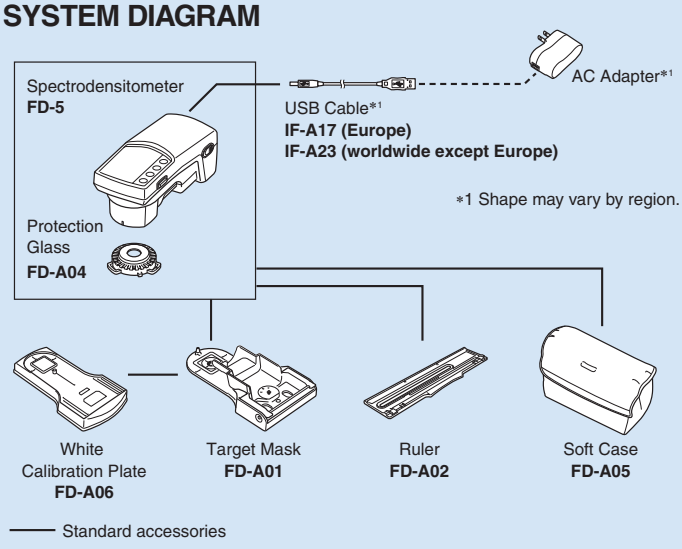
Robust design

- 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.
- Compared to conventional instruments, which use tungsten lamps as a light source and may be subject to repeatability issues related to temperature drift, the LED illumination technology of the new FD-5BT offer an almost infinite lifetime and unprecedented repeatability levels for a handheld spectrodensitometer.

Long-life LED lamp light source

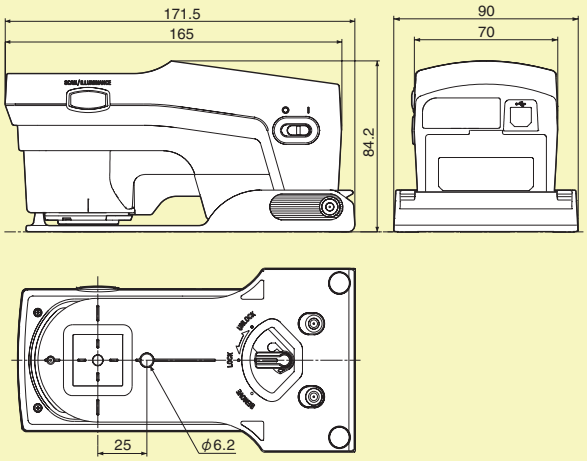


SYSTEM DIAGRAM



DIMENSIONS (Units: mm)

With removable target mask attached



Main specifications

Model	FD-5BT
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
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 σ⊿E00 0.05 (When white plate is measured 30 times at 10-second intervals after white calibration has been performed)
Inter-instrument agreement	Within ⊿E00 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
Displayed values	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	⊿E*ab (CIE 1976), ⊿E*94 (CIE 1994), ⊿E00 (CIE 2000), ⊿E (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)
Interface	USB 2.0
Output data*2	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.

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.

- Displays shown are for illustration purpose only.
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Registration Date : March 12, 1997

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