

Spectrodensitometer **FD-7 and FD-5**

State of the Art instruments for measuring Colour, Density and Light



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Ultra light Spectrodensitometer – the perfect instrument for conventional and digital **printing and packaging applications**

For the first time UV calibration in accordance with ISO 13655 M1

The new Konica Minolta FD Spectrodensitometers conform to measurement mode M1 of ISO 13655:2009. In addition to ISO measurement modes M0, M1, M2 and M3, the patented "Virtual Fluorescent Standard" (VFS) technology (UV calibration) allows the user to take measurements accurately for any light source.

Close correlation with visual evaluation

The impact of fluorescent whitening agents in papers on the final print depends on the amount of UV in the viewing environment. Until now Instruments were unable to take UV content into account.

Using Konica Minolta's VFS technology, the actual amount of UV in the viewing environment can be used for measurements. The result is a close correlation between visual evaluation and measurement when assessing the impact of whitening agents.





New perspectives in colour matching

Take advantage of the experience of the world leader in light measurement. The FD-7 is perfectly suited for measuring light sources. Illuminance, colour temperature and Δuv are shown on the instrument display.

For the first time visual evaluation and colour measurement are closely correlated by using the colorimetric values of the light source for measuring reflectance.

We take all possible steps to ensure the accuracy of your instrument

With conventional Instruments it is necessary to regularly correct for a wavelength shift. In the past, this could only be corrected by the manufacturer. The FD-5 and FD-7 perform an evaluation of wavelength accuracy and if necessary a shift compensation with every white calibration.

As the instrument also corrects for temperature drifts one can be assured of precise and stable measurements between annual preventive maintenance checks – Testimony to Konica Minolta's superior technology and commitment to innovation.

A versatile solution for the printing industry



In addition to its use as a lightweight stand alone instrument, when connected to a PC, the FD-7 can be used for scanning test charts.

In scan mode one measurement shows the impact of fluorescent whitening agents for several viewing conditions. This is a unique feature. The light measurement allows the user to compensate for the viewing conditions in the light cabinet, at the Point of Sale or at a trade fair to ensure perfect colour reproduction.

Lightest of its class

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The main body with the target mask attached weights just 430g, lighter than any comparable instrument currently available. Assuring easy and fatigue free measurement sequences.

3 in 1 Colour Density

Achieving standards with ease Challenges are solved by expertise

World first: Conversion of measurement backings

The Konica Minolta FD-series Spectrodensitometers solve the challenge of colour control on a black backing against standards that were established for a white backing. The built-in backing compensation function is a world first in a spectrodensitometer.

Quality – not compromises

TARGETMATCH displays the optimal print density to achieve stored colour standards. With ISOCHECK these standards can be controlled according to colour value and tone value increase without the need for additional software. The colorimetric gray balance check completes the objective quality control functionality.

TARGETMATCH	M1 2° D50
✓ Paper	⊿K +0.120D
Black	⊿E*ab
¢□Cyan	3.75@ 1.460D
Magenta	>> 2.02@ 1.580D
2/9	CS01:PT1-AM-BB
Measured Black	{

Compatible

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The Spectrodensitometers FD-5 and FD-7 share the same hardware meaning improved consistency in prepress, ink colour matching and pressroom. The Konica Minolta calibration standards and traceability assure state-of-the-art compatibility with the standards of the printing industry.

For every challenge

Colour standards according to ISO 12647 or brand colours can be saved as color sets and uploaded to the instruments using the FD-s1w Data management software. Uploaded standards can be used by ISOCHECK for quality control and process adjustment by TARGETMATCH at any time.

Automation for the routine and the extraordinary

The ColorScoutA+ is an automated precision xy-stage with a 320*460mm scan area to enable automated measurements of characterisation charts with a large number of colour patches. The FD chartmaker is included free of charge to enable users to easily create complex test chart layouts.

Using the xy-stage and the FD-7 users can make significant time savings when scanning large test charts.

Solutions built around your needs

Intelligent solutions for speciality printing

Using CSA+ and the basICColor catch Software Suite enables highly automated measurements of charts even if they have to be distributed over several prints (e.g. labels, credit cards).

Automation for LFP printers

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Digital large format printers can use several substrates which are challenging or impossible to be measured for conventional printing industry equipment (e.g. aluminium, ceramics, wood, textiles, vinyl). By automating the Konica Minolta CM-2600d (sphere spectrophotometer) the ColorScoutA+ offers a solution is combined in the first time. This canables chiesting chiesting calibration for measured for the first time.

in combination with ICC Profiling Packages for the first time. This enables objective calibration for materials with structured or metallic surfaces.

Model	ColorScoutA+
Measurement range (maximum chart size)	320 x 460 mm
Measuring instrument	Spectrodensitometer FD-7 / FD-5 & Spectrophotometer CM-2600d
Minimum chart patch size	6 x 6 mm
Maximum sample thickness	FD-7: Standard 1.5 mm (others on request) CM-2600d : 30 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+, basICColor Catch
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

Model	Spektraldensitometer FD-7	FD-5		
Illumination/viewing system	45°a:0°(annular illumination) *1			
Construction device				
wavelength range	Spectral reliectance: 380 to 730 nm 7 Spectral Irradiance: 360 to 730 nm	Spectral relectance: 380 to 730 nm		
Wavelength pitch	10 nm			
Half bandwidth	Approx. 10 nm			
Measurement area	Ø 3.5 mm			
Light source	LED			
Measurement range	Density: 0.0D to 2.5D; Reflectance: 0 to 150%; Illumination 0 to 9990 Lux			
Short-term repeatability	Density: σ 0.01D; Without polarization filter: 0.0D ~2.5D, Yellow: 0.0D ~2.0D With polarization filter: 0.0D ~2.5D, Yellow: 0.0D ~1.8D (When measurements taken 30 times at 10-seconds intervals after white calibration has been performed) Colorimetric: Within $\sigma\Delta E_{s0}$ 0.05 (Without polarization filter) (When white plate is measured 30 times at 10-second intervals after white calibration has been performed)			
Inter-instrument agreement	Within ΔE_{00} 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 without polarization filter)			
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), M2 (illumination with UV-cut filter) and M3 (M2 + polarization filter); User-defined illuminant			
Illuminants	A, C, D50, D50, D65, ID65, F2, F6, F7, F8, F9, F10, F11, F12, User-defined illuminant			
Observers	2° Standard Observer, 10° Standard Observer			
Colour spaces	L*a*b*, L*C*h, Hunter Lab, Yxy, XYZ and colour-difference in these colour spaces			
Colour-difference equations	ΔE*ab (CIE 1976), ΔE*94 (CIE 1994), ΔE00 (CIE 2000), ΔE (Hunter), CMC (I:c)			
Indexes	WI (ASTM E313-96); Tint (ASTM E313-96); ISO Brightness (ISO 2470-1); D65 Brightness (ISO 2470-2); Delta Brightness ("Fluorescent Whitening Intensity")			
Density	ISO Status T, ISO Status E, ISO Status A, ISO Status I; DIN16536; Spectral density for spotcolours			
Advanced features	Greybalance (densitometric & colorimetric), ISOCHECK (QC against ISO or own standards), TARGETMATCH, Trapping, Plate measurement			
Data Memory	Single data: Colorimetric target data: 30 data; Density target data: 30 data 50 color sets: 15 colorimetric target data per color set with 3 additional tone values each. ColorSets for standard printing conditions are already included.			
Display language	English, French, German, Spanish, Japanese, Chinese (simplified)			
Interface	USB 2.0			
Output data *2	Colorimetric and densitometric values; Spectral reflectance and irradiance	Colorimetric and densitometric 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. 350 (Body only); Approx. 430 (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				
11 Illumination for wavelengths under 400nm is unidirectional. *2 Available when using PC software.				

SAFETY PRECAUTIONS

SPEKTRALDENSITOMETER FD-7/FD-5 For correct use and for your safety, be sure to read the instruction manual before using the instrument. < Dimensions in mm > < System Diagram > with removable target mask attached Always connect the instrument to the specified power USB Cabel IF-A17 (Europe) supply voltage. 90 · Improper connection may cause a fire or electric shock. 70 Spectrodensitomete FD-7/FD-5 O Color Manager Displays shown are for illustration purpose only. Spectra Magic[®] N) KONICA MINOLTA and the Konica Minolta logo and the symbol mark, and «Giving Shape to Ideas» are registered trademarks or trademarks of KONICA MINOLTA HOLDINGS, INC. Q (commercially available FD-A04 The basICColor logo is a registered trademark of basICColor GmbH. The specifications and drawings given here are subject to change without prior notice. 171.5 165

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Soft Case FD-A05

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FD-A03

Optional

accessories

e Adapter





Hard Case B027-805

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Target Mask FD-A01

Whit

Calibration Plate

FD-A06

Phone: 888–473–2656 (in USA) 201–236–4300 (outside USA)

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FD-5, FD-7

rd accessories

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FD-A08

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Ruler FD-A02

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