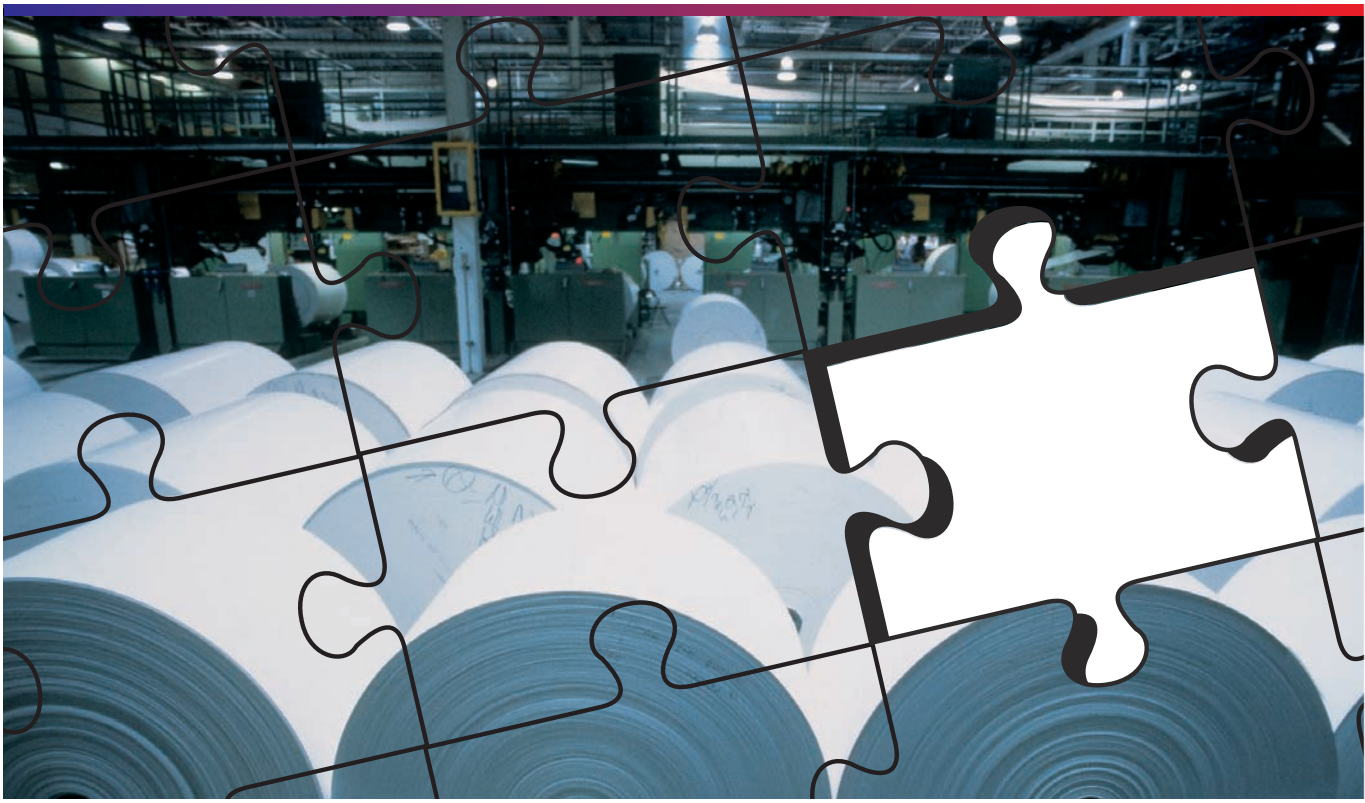
KONICA MINOLTA

Spectrophotometer CM-3630
PaperControl Software



The missing link to total quality
Solutions made to measure the paper industries´ needs.

Introducing Konica Minolta´s high-efficiency ISO solution
for precise whiteness and color measurement

The essentials of imaging

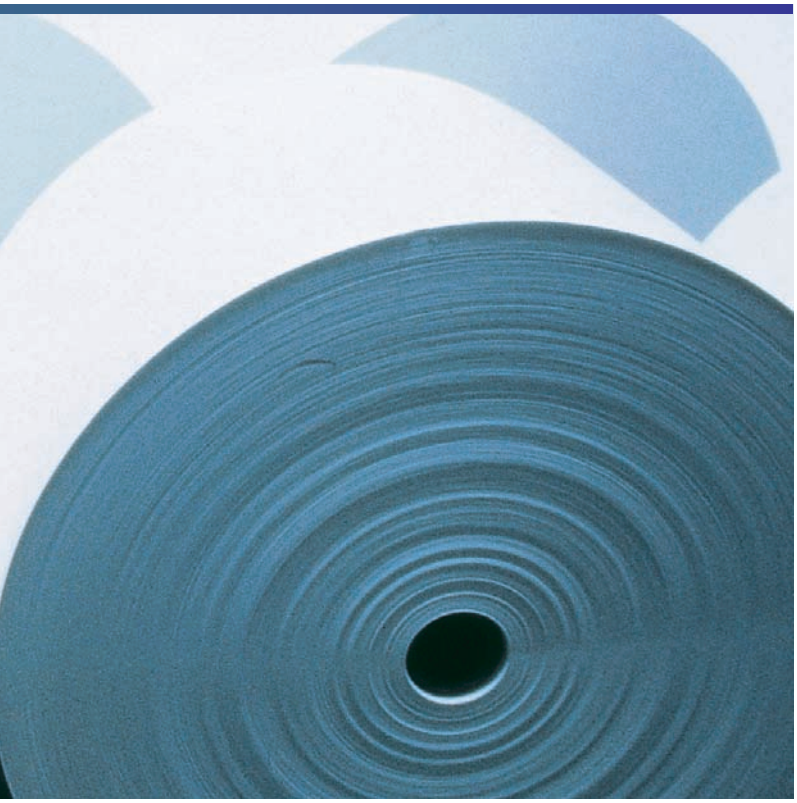
Exactly what you've been waiting for:

Introducing our state-of-the-art Spectrophotometer CM-3630 and PaperControl software for the edge in quality control.

Highly competitive markets, such as the paper, pulp and cellulose industry, require a commitment to top quality throughout. With Konica Minolta's state-of-the-art Spectrophotometer CM-3630 and the accompanying PaperControl software you can precisely monitor production at all times.

Designed to keep an eye on the optical properties of pulp and paper during the complete production process, the CM-3630 measures brightness, opacity, fluorescence, color, whiteness and tint. To meet your exacting standards, PaperControl software has been developed in close cooperation with the paper, pulp and cellulose industry.

Finally a professional solution to ensure uncompromised quality



ISO standards

The CM-3630 ensures adherence to ISO optical standards and a wide array of national standards worldwide. It provides exact conformity with ISO standards 2469 and 2470 for measuring ISO brightness. With PaperControl software, brightness, opacity, whiteness and yellowness indices are calculated and displayed in accordance with several international and national standards such as: ISO, SCAN, DIN, TAPPI, CPPA, and AFNOR.

Whiteness Measurements

To get correct measurement readings of paper with Optical Brightening Agents, the amount of UV radiation must be controlled and adjusted. PaperControl offers several methods to adjust the UV radiation.To prevent the triplet effect exhibited by some special Optical Brightening Agents, the CM-3630 allows you to switch the light source between full power and soft flash mode.

Your professional quality agent right on the production line: Uncompromised quality thanks to advanced PaperControl software and perfect adherence to ISO standards.

Measuring Color Difference

In addition to production control and whiteness measurement, PaperControl also provides a Color Difference module, which displays the measurement readings as numerical data, spectral reflection curves or color space plots.

Quick Opacity Measurement

Measuring opacity can be done in a matter of seconds: Simply position the opacity jig on the white side and measure. Then rotate the opacity jig to the black side, measure again – that's it!

Patented* Numerical UV Control

Numerical UV Control (NUVC) makes calibration and adjustments to whiteness and tint a swift and quick procedure. In fact, the whole process is much faster than current methods used in conventional instruments. Since it's all done digitally, exact and reliable results are assured. And with the total absence of moving parts in the spectrophotometer's optical system, it is absolutely robust and completely maintenance-free! With patented NUVC, Konica Minolta has turned the once time-consuming and error-prone calibration process into a quick, accurate and reliable procedure.

Data compatibility

The CM-3630´s numerical UV control system combined with its user calibration option allows easy adjustment of the instrument parameters to your current measurement system. Such precision guarantees that your brightness measurements will perfectly correspond with the data you've collected over the years.

*US Patent No 5,636,015.

Used by STFI
as reference instrument
for measuring white paper standards

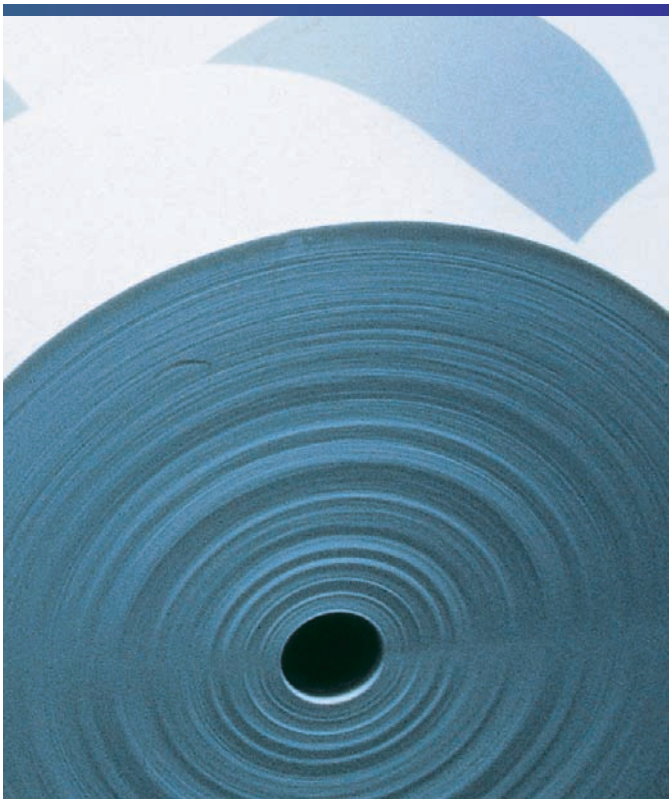
Konica Minolta - a synonym for reliability and expertise throughout the paper industry

Konica Minolta manufactures its advanced measuring instruments with meticulous care. Strict quality controls ensure that each product rigorously conforms with exacting industry standards.
For over 60 years, Konica Minolta has offered innovative, affordable solutions that deliver solid value through their reliability, durability, accuracy, precision and repeatable performance.

Technical Data

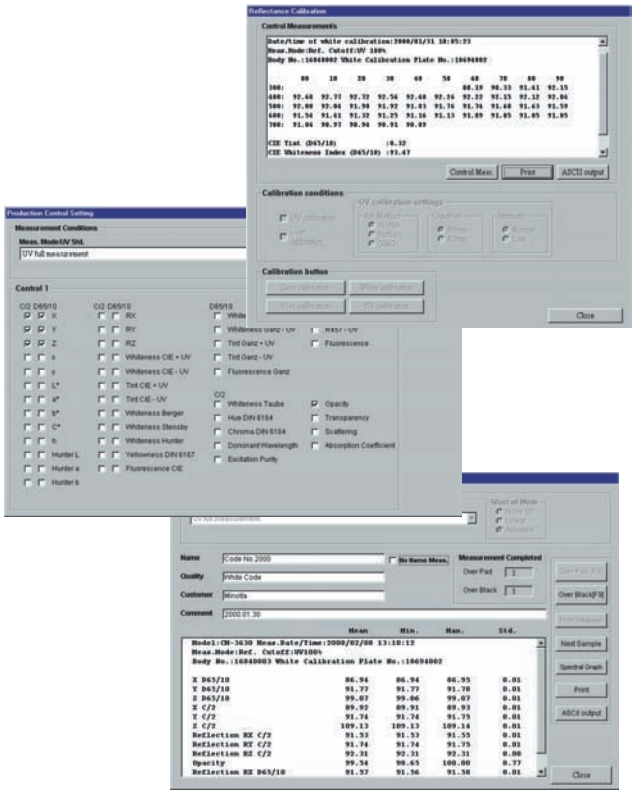
Model	CM-3630
Illumination/viewing system	Reflectance:d/0 (diffused illumination, 0-degree viewing) Conforms to ISO 2469, JIS P8148, DIN 53145-1 and DIN 53145-2 standards.
Light-receiving element	Silicon photodiode array (dual 40 elements)
Spectral separation device	Diffraction grating
Wavelength range	360nm to 740nm
Wavelength pitch	10nm
Reflectance range	0 to 200%; resolution: 0.01%
Light source	Pulsed xenon lamps (x 3)
Measurement time	Approx. 1.5 seconds (for measurements of fluorescent colors, at 9600 bps)
Minimum interval between measurements	Approx. 4 seconds; when reflectance measured, approx. 5 seconds; when fluorescent color
Measurement/illumination area	30mm/34mm
Inter instrument agreement	Mean ΔE*ab 0.2 based on 12BCRA Series II color titels compared to values measured with master body
Repeatability	Spectral reflectance: Standard deviation within 0.1% Colorimetric values: Standard deviation within ΔE*ab 0.02 (condition; white calibration plate measured 30 times at 10-second intervals)
Temperature drift	Spectral reflectance: Within +/- 0.10%/°C Color difference: Within ΔE*ab 0.05/°C
UV adjustment	Instantaneous numerical adjustment
Control method	Directly connected to a computer
Interface	RS-232C format
Power	100-240V AC, 50-60Hz 25W AC (with a dedicated AC adapter)
Size (WxHxD)	300 x 585 x 315 mm
Weight	15.5 Kg
Operating temperature/humidity range	13 to 33°C, relative humidity 80% or less (at 30°C) with no condensation
Standard accessories	White calibration plate CM-A 133, Zero calibration box CM-A119, AC adapter AC-A12, RS-232C cable IF-A12, Accessory Case CM-A117, Dust Cover CM-A118, Unit Driver CM-A108
Optional accessories	Color Data Software PaperControl for CM-3630, Opacity jig CM-A134, RS-232C cable IF-A10, IF-A11, IF-A13, IF-A14, IF-A15

Specifications subject to change without notice



Peace of mind for the pulp and paper industry

Swift performance, reliable data - everything under control



Production Control Module

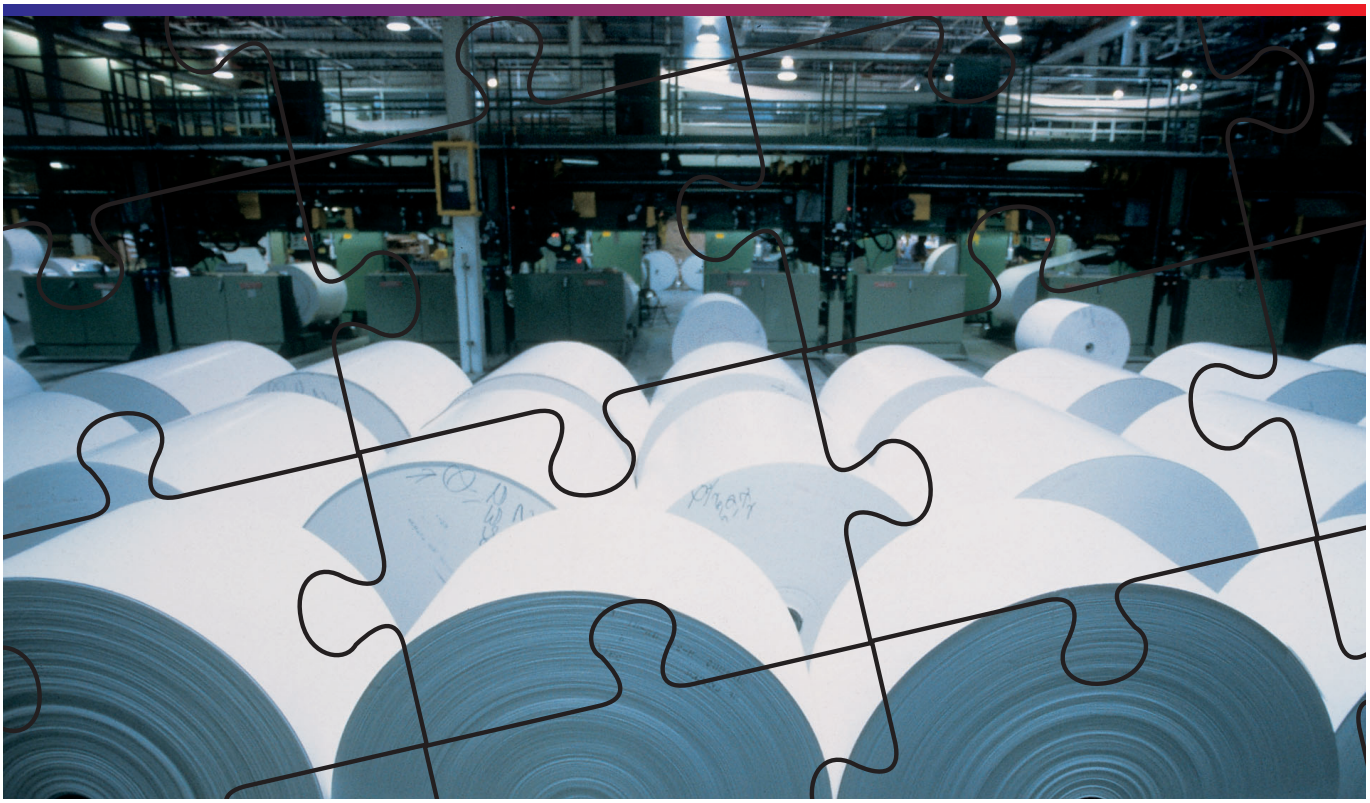
PaperControl makes routine production control much easier, faster, more comfortable and reliable - in short: more professional. No more confusion by mixing production control and general QC tests as in conventional multi-purpose software. PaperControl is all you need to control your production line. All possible measurement parameter settings are already preprogrammed – for quick selection by the supervisor.

The production control module allows programming and labelling for a large number of jobs. Up to 9 different processes can be displayed in easy-to-understand menus. Thus, the operator gets valuable assistance in performing the most commonly used measurement routines. The end result is overall increased productivity.

The measurement data can be transferred to the production control process system. This ensures that specific test runs are being done under the same conditions – providing consistent, reliable results. And to make it even easier, all settings and measurements of this Windows-based software (Windows®95, Windows®98, and Windows NT®4.0) are keyboard-controlled.

Automatic calibration

Calibration is performed automatically for every conceivable combination of measurements in a few seconds. This valuable feature saves time and ensures reliable measurement data when new routines or tests are selected.



SAFETY PRECAUTIONS

To ensure correct use of the instrument, please adhere to the following.

- Before using the instrument, be sure to read the instruction manual.
- Always use the specified power. Use of inappropriate power may result in afire or electric shock.

ISO 9001 CERTIFIED

The manufacturing center of Konica Minolta Sensing Inc. (Location: Aichi Pref., Japan) was approved by the British certification organization Lloyd's Register Quality Assurance for certification under the ISO 9001: 1994 international quality management system standards on March 3, 1995. Since its establishment in 1990, the center has carried out the development and production of precision instruments and associated application software for the measurement of color, light, and shape.
Certification was awarded to the center's quality management system, including design, manufacturer, management of manufacture, calibration and servicing.Certification was carried over to the ISO 9001: 2000 standards in February, 2003.

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