Stand Alone

Spectro Analyzer

For determination of ISO brightness, color, color differences, fluorescence and opacity.
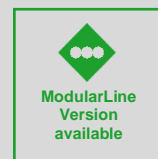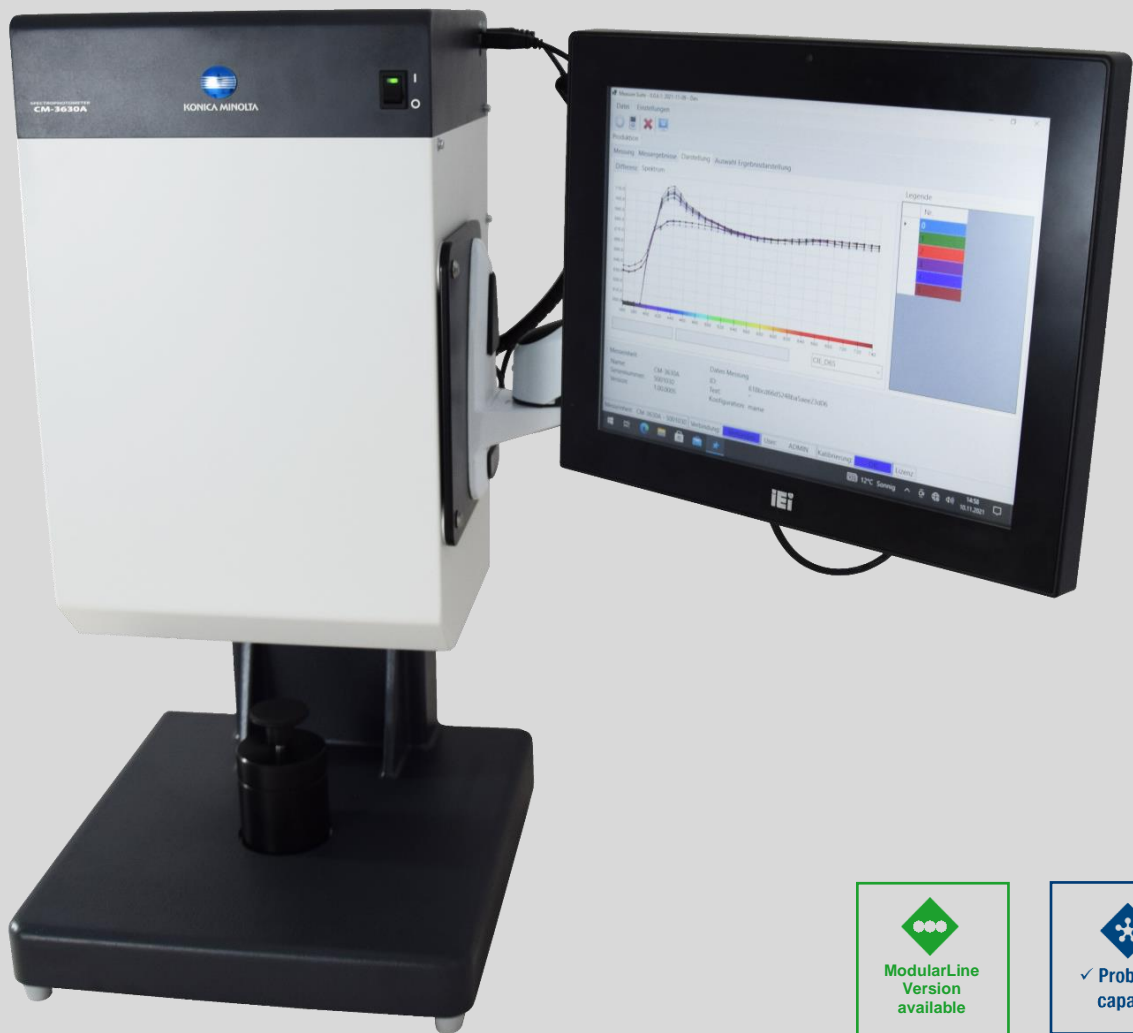
For:

✓ **PAPER**

✓ **BOARD**

✓ **TISSUE**

ModularLine Version available

✓ **ProbeNet-capable**

MOST IMPORTANT BENEFITS:

✓ **Compact device with inbuilt touch screen**

✓ **Double-beam-spectrometer with d/0° geometry**

✓ **Measuring with different light sources without recalibration**

✓ **Automatic calculation of the standard deviation after several test sequences**

FRANK- PTI
QUALITY TESTING INSTRUMENTS
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PRODUCT DESCRIPTION

The Spectro Analyzer perfectly meets requirements for fast and accurate measurement of optical characteristics of paper during the manufacturing process. The optical system, using a d:0° sphere geometry with 30mm measuring aperture, is in full compliance with all relevant international standards such as ISO, SCAN, DIN, TAPPI, CPPA and AFNOR. Using the patented Numerical UV control (NUVC) it is a highly accurate and reliable bench top spectrophotometer in the production environment. Controlled via tablet panel and the special software the Spectro Analyzer can give values for color, tint, whiteness, yellowness, brightness, fluorescence and opacity. Furthermore, the numerical UV-control allows easy adjustment of the instrument's parameters to other instruments and thus, guarantees perfect data correlation.

Compatibility with predecessor
The new Spectro Analyzer shares the same optical system with its predecessor. (One of the reference instruments at RISE, Stockholm.) This means that all users of the previous model can use their historical measurement data without transition problems.

Improved targeting by camera preview
Easy positioning in real time to target small samples with patterns or inhomogeneous surfaces.

Smaller measurement area possible
Smaller apertures were added to analyze small-sized samples or printed samples with patterns; for the first time you can reliably compare data for smaller targets.

Windows tablet ready for standalone usage
Using the USB interface and side-fixtures, the Analyzer can be used together with the software and tablet panel to create a touchscreen-ready, standalone system with minimum footprint.

TEST DESCRIPTION

The desired measurement method is selected from preset standard test types or a predefined test program created by the operator. The identification number of the sample (tambour number, etc.) is entered to identify the sample. Then the sample is placed on the sample support, and this is released to initiate automatic closing. Pushing the start button begins the measurement. The results are displayed on the touch screen, both numerically and graphically. If more than one test is carried out, these can be compared as statistics as well as displayed as standard deviations. The data can be easily printed via the unit's USB port, or stored using a USB compatible storage device.

TECHNICAL DATA

DEVICE / INSTRUMENT

- Optical system with d:0° spherical geometry complies with all common standards
- Easy adaptation of instrument parameters to other instruments
- Good compatibility with predecessor and its measurement data
- Improved target acquisition through camera preview
- Smaller measuring range possible
- ProbeNet compatible
- Modularline version available (coming soon)
- Protection classification IP20 / 2

APPLICABLE STANDARDS

DIN53145 53147, 54500
ISO 2469, 2470,2471,3688,11475,11476
TAPPI T519, T525, T527
*more standards on request

MEASUREMENT

Measurement method:	- ISO whiteness (R457) - Color: XYZ/Rx,Ry,Rz/L,a,b/ L*,a*,b*/L*,C*,h*/ x,y,Y - Color difference between two samples / standard and sample - Fluorescence measurement - Opacity
Measurement geometry:	Reflection: d:0° (diffuse lighting / = ° observation) LAV setup corresponds to the standards ISO 2469, JIS P8148, DIN 53145-1, DIN 53145-2
Wavelength range::	360 nm -740nm
Wavelength interval:	10 nm
Measuring range:	0 – 200%; Resolution: 0,01%
Measurement time:	approx. 1,5 secs
Minimum time between two measurements:	Approx. 2 seconds (UV 100%) Approx. 3 seconds (UV 0% UV adjusted)
Measurement / lighting area:	LAV : Ø 30/34mm MAV: Ø 08/11mm

Sample clamping pole with clamped sample
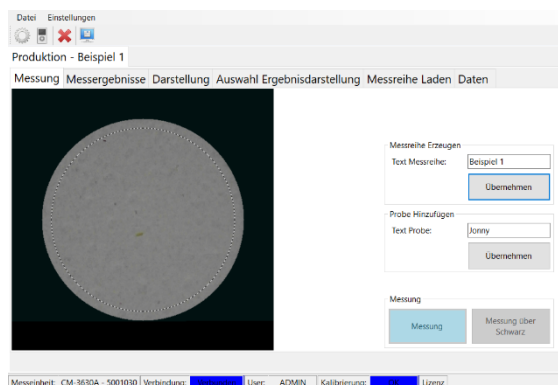
Measure screen of the Measure Suite
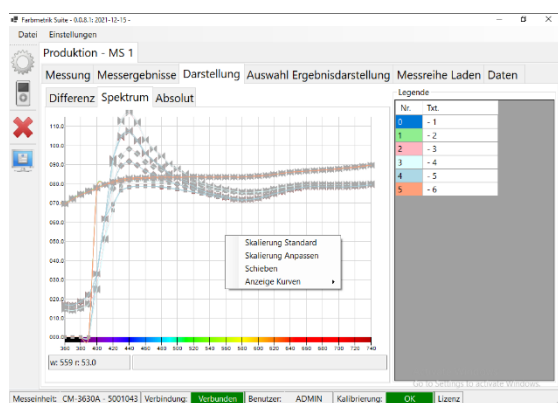
Graphical result display of the measure suite

Black, white and UV standards for calibration

SYSTEM

Sensor:	silicon photodiode cell (2x40 elements) diffraction grating
Light source:	Xenon flash lamps (3 pieces)
Device comparability:	mean ΔE^* 0,20 12 BCRA Series II (ceramic tiles compared to the master device under KM calibration conditions)
UV balance:	100% / 0% / adjusted 400 nm and 420 nm UV-blocking filters (NUVC: numerical UV adjustment, no mechanical filter movement required)
Sample viewing:	means of built-in camera; software (not included)

CONNECTIONS

Power supply device:	24V; 2,71A
External power supply:	100-240V; 50/60Hz; 2,1A
Power consumption:	<35W / 0,04kWh
Water:	no
Compressed air:	no

DATA

Ethernet:	data output. / MQTT
USB:	updates / service

DIMENSIONS

	L x H x W net
S406060000	340 x 630 x 620 mm Screen 300 x 245mm
Weight:	net / gross
S406060000	approx. 20,5 kg/ 60 kg with case approx. 21,5 / 60 kg

ARTICLES / MODELS

S406060000	Spectro Analyzer

Recommended accessories:

S406051009	UV tile (working standard) (If not owned already, Recommended for newly purchased devices).
S406900001	ProbeNet software inclusive one licence *requirements gladly explained on request.

Technical Comparison

Spectro Analyzer S40606   BCM S40600 TS/ PC

Main improvements:

- More modular built up
  - better accessibility
  - easier maintenance
  - quicker and easier exchange of spare, repair and tare parts
  - better for maintenance and service on distance
- More sensible / better numerical UV-balance
- Sample observation via camera system (better sample positioning before measurement – causes less measurement errors)
- Exchangeable measuring orifices / areas
  - Wider usability, especially for print area
  - LAV: Ø 30/34 mm (Large area view)
  - MAV: Ø 08/11mm
  - (Medium area view)
  - Existing color and white standards can be used

- More difficult service due to compact build up and unnecessary double housing

- Partly difficult sample positioning in the device, especially on small samples

- Fixed size of the measuring orifice/area
- Ø 30mm

←

Technical Data:

Measurement method:
- ISO whiteness (R457)
- Color: XYZ/Rx,Ry,Rz/L,a,b/ L*,a*,b*/L*,C*,h*/ x,y,Y
- Color difference between two samples / standard and sample
- Fluorescence measurement
- Opacity

Wavelength range: 360 nm - 740 nm
Wavelength interval: 10 nm

Measurement method (BCM):
- ISO whiteness (R457)
- Color: XYZ/Rx,Ry,Rz/L,a,b/ L*,a*,b*/L*,C*,h*/ x,y,Y
- Color difference between two samples / standard and sample
- Fluorescence measurement
- Opacity

Wavelength range: 360 nm - 740 nm
Wavelength interval: 10 nm

Measuring geometry:

Spectro Analyzer S40606	BCM S40600 TS/ PC
d / 0° (double beam spectrophotometer)	d / 0° (double beam spectrophotometer)
(diffuse lighting / Angle of Observation)	(diffuse lighting / Angle of Observation)
Reflectance range:0-200 % resolution 0.01%	Reflectance range:0-200 % resolution 0.01%
Light source: XENON-Lamps 3 pcs	Light source: pulsed XENON-Lamps
Sphere diameter: 152mm	Sphere diameter: 152mm
Measuring time: ca.1,5 sek	ca. 1,5 sec
Minimum distance between 2 measurements:	Minimum distance between 2 measurements:
Ca. 2 sec (UV 100%)	Ca. 2 sec (UV 100%)
Ca. 3 sec (UV 0%)	Ca. 3 sec (UV 0%)
Sensor:	Sensor:
Silicon photodiode cell	Silicon photodiode cell
(2x40 elements)	(2x40 elements)
Diffraction grating	Diffraction grating
UV balance:	UV balance:
100% / 0% / adapted.	100% / 0% / adapted.
400nm and 420 nm UV-blocking filter	400nm and 420 nm UV-blocking filter
NUVC: numerical UV balance	NUVC: numerical UV balance
No mechanical filter movement needed	No mechanical filter movement needed???
Sample observation, with inbuilt camera	-

Connections:

Spectro Analyzer S40606	BCM S40600 TS/ PC
Power: 110-230V 50-60Hz	Power: 110-230V 50-60Hz
AC adapter	AC adapter
Water: no	Water: no
Compressed air: no	Compressed air: no

DATA:

Spectro Analyzer S40606	BCM S40600 TS/ PC
Ethernet: MQTT / data output	RS232 (data output)
USB: 2-4 (service / updates/ data output)	USB: 2 (service / updates)

*Subject to change