

On-Line Brightness and Whiteness Measurement ERX40

Brightness and whiteness measurement in the pulp with 45°/0° geometry, spectral resolution with and without UV excitation of optical brighteners

Advantages of On-Line color measurement

- ✓ Possible corrections before production is out of tolerance result in reduced waste
- ✓ Continuous process monitoring, therefore early identification of disturbance (material, process, control)
- ✓ On-Line whiteness measurement is needed for fast manual control and automatic control, resulting in stable production
- ✓ Documentation of the production (ISO 9000)



ERX40

Special advantages of the ERX40

- ✓ Outputs: ISO brightness, CIE whiteness of the wet stock, which includes optical brighteners; additionally basic whiteness and fluorescence
- ✓ Like in the laboratory: Stable measurements with and without UV excitation
- ✓ Closed system avoids dirt in the instrument
- ✓ Robust design, high accuracy
- ✓ Proven technology, many instruments are in use in the paper industry
- ✓ Diagnostics for disturbances are stored in the internal memory
- ✓ Optional: connection to the process control system via OPC, LAN or analog outputs
- ✓ Optional: upgrade to a*-value display, Y-value display and high resolution color measurement possible

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**On-Line color measurement
pays off:
Improvements in
quality and profit**

Functional description ERX40

The ERX40 is a compact on-line whiteness sensor with the standardised geometry of 45°:0° to measure pulp with a consistency of 3 % to 15 %.

The sample is measured with white light (Xenon-flash lamp, daylight), with and without ultraviolet content. Normal to the sample surface (under 0°) the reflected light is collected and an electronic filter calculates the whiteness and brightness.

Simultaneously with the sample measurement a reference measurement of the lamp is made.

The automatic calibration ensures long time stability of the instrument.

The instrument is controlled by a computer to which the data is transferred. Besides the RS 232 interface a RS 422 interface is available. This allows distances from the computer to the measurement unit for more than 500 m. The built-in optical isolation guarantees stable operation in real world production environment.

Turn-key system

The ERX40 instrument is delivered with software and computer as a turn-key system directly from the manufacturer.

In color, whiteness and brightness measurements we are the experts and proven partners!

Technical data ERX40

Measurement system ERX40

Automatic calibration and measurement with standardised geometry 45°:0°, with and without UV radiation

Illumination	45° circular
Lamp 1	D65 adjusted, UV adjustable
Lamp 2	without UV, cut off typ. 420 nm
Viewing direction	0°
Measurement area	12 mm diameter
Repetition time	20 sec typ., 5 sec min.
Double beam (sample and reference channel)	simultaneously
Measurement time	20 ms
Calibration (traceable to PTB)	instrument specific white standard
Communication with computer	RS 232, 9600 Baud
Surrounding temperature	50°C
Reproducibility	dW _{ISO} < 0,3
(standard deviation for repeated difference measurement of the white standard)	
Interinstrument agreement between ERX40 systems	dW _{ISO} < 0,5
(Standard deviation on the white standard)	
Tube connections	2 x G 1"
Recommended flow	approx. 50 l/min (adjustable valve recommended)
Size	approx. 610 x 220 x 150 mm ³
Weight	approx. 12,5 kg
Protection	IP 65, CE mark

Communication and power supply EPX

Input voltage	220V AC, +25% / -15%, 45-440 Hz option: 110V AC, +25% / -15%, 45-440 Hz
Power consumption	max. 50 VA, typ. 10 VA
Computer interface	optically isolated
RS 232	max. 10 m cable
RS 422	max. 500 m cable
Measuring head interface	max. 20 m cable
Size	approx. 250 x 110 x 90 mm ³
Weight	approx. 2,5 kg
Protection	IP 65, CE mark

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