SmartScan™ by Cristini

Microwave contactless web moisture meter

- Contactless paper dryness scan
- Advanced microwave technology
- Excellent tool for energy savings
- Ideal for process optimization
- Quick return on investment

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Measuring sheet moisture

The continuous measurement of **sheet moisture** in the press section is important to **optimize press nip efficiency**, **machine clothing performance**, and to reduce/control loop vacuum. A 1% increase of dry content in the press section gives a 4% reduction in steam consumption in the dryer section, therefore an accurate sheet moisture measurement is very important to **lower the energy consumption**.

SmartScan™

SmartScan™ is the first on-line **contactless, single side, microwave meter.** The highly accurate meter measures sheet consistency/moisture on pulp and paper machines, is non radioactive, and easy to install . The system is based on unique **microwave technology & algorithms**, that allow precise consistency measurements of paper moisture.

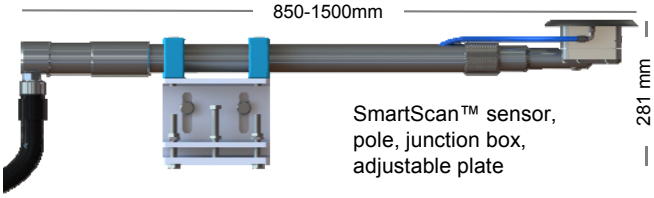
It is developed to **overcome the typical limits of the NIR (near-infrared)** sensors (weak thickness penetration, sensitivity to colour/paper surface, calibration required for each grade & grammage).
SmartScan™ calibration is universal for all grades, supplying real data of web moisture in gr/m2 (or %) to the machine DCS/MCS system for easy consistency calculations. It is available both for **fixed point positions or traversing web scan**, utilizing the well proven EasyScan™ cross beam series.

The control unit is a sophisticated hub with **connections to 16 sensors**, compatible with the full range of Cristini smart sensors for the forming, press & dryer section.
The system diagnostics, sensor normalization, FFT analysis **are performed trough an Android™ tablet** and dedicated SmartApp™. Remote diagnostics via internet.

Targets

- Precisely measure sheet moisture without having to access the paper machine, eliminating a safety hazard;
- Achieve important energy savings through press section setup/PMC optimization;
- Optimization of sheet CD moisture profile;
- Facilitate troubleshooting of previously uncontrolled process variations;
- Increase the amount of measuring points in the press section;
- FFT analysis of sheet grammage pulsation.

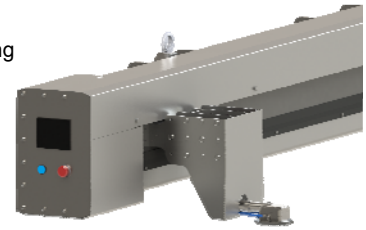
Accessories



SmartScan™ sensor, pole, junction box, adjustable plate


Epic™ system control unit, standard 16 input/output, Wi-Fi, LAN, web connection


Android™ tablet running SmartApp™


EasyScan™ beam for cross scans (optional)

Measurement

	Min Max	Resolution	Output
Range (water mass)	1-3000 gr H_2O/m^2	0,1 gr H_2O/m^2	gr/m^2, lbs/ft^2, % dryness
Range (consistency)	3-60% (paper), 25-90 %	0,02 %	%
Range (temperature)	(pulp) 1-80 ° C	0,1 ° C	° C
Range (FFT analysis)	1-512 Hz	1 Hz	Hertz
Range (web distance)	1-20 mm		
Accuracy & repeatability	0,003% of the max value		

Instrument

Sensor (water mass)	Microwave, multi-array antenna	Serial comm. ports	Ethernet T-Base 100, Wi-Fi, LAN
Sensor (temperature)	Thermocouple	Output	16 x 4-20 mA
Meas. area	6590 mm^2	Operating temperature	+1/+85 ° C
Meas. rate	1024 sps (in FFT mode)	Operating humidity	0-100% RH
Output rate 4-20mA	4 sps	IP protection level	69 (sensor), 43 (control unit)
Resolution rate	16 bit	Dimensions (sensor)	21,0 x 7,2 x 7,4 cm
Material	AISI 316 p. (sensor full assembly)	Dimensions (control unit)	48,5 x 13,0 x 28,0 cm (rack)
Power	110-220V AC, 50/60 Hz	Weight (sensor)	1,3 kg
Air supply	0,3 bar	Weight (control unit)	7,0 kg

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