Product Information Note

Honeywell

Experion MX Gloss Measurement

Experion MX will help improve your business performance in today's challenging economic environment. This fully integrated quality control and process knowledge system provides superior visibility into the papermaking process while it simplifies your operational efforts and is easy and cost effective to maintain and service. Improve paper quality, reduce raw material, energy, services and maintenance costs, and increase production efficiency with a package of solutions that provides the lowest total lifecycle cost available – Experion MX.

Gloss Measurement

The Experion MX Gloss Measurement Model Q4208-52 provides accurate, high resolution, scanning gloss measurements for moving continuous web products. The sensor measures gloss using the principle of specular reflectance of visible light at TAPPI 75º.

The Gloss Sensor is designed for continuous operation in hostile production environments with features that include liquid-circulation temperature control, real-time compensation for dust buildup on windows, and air-vortex sheet stabilizers to maintain correct sheet positioning without contacting the sheet.

The sensor's fast response, coupled with Experion MX signal processing, support the fast scanning that is critical for fast resolution of gloss profile changes. The fast, accurate gloss measurement that the sensor provides enables fast-response gloss control, resulting in reduced gloss culls and improved product quality.

The Experion MX Gloss Sensor has robust accuracy, achieved with its LED light source and automatic dirt compensation.

Features and Benefits

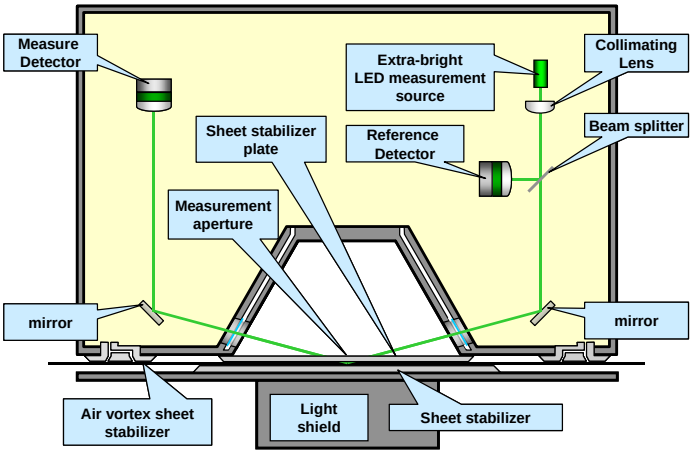
- Fast-response, accurate scanning gloss measurement is designed specifically for online operation and closed-loop gloss control
- Capable of providing TAPPI 75º gloss measurement
- Continuous, real-time compensation for dirt buildup on windows ensures superior accuracy both between standardizations cycles and over the long term
- Sheet stabilization on both measurement and opposite sides of the sheet ensures precise sheet positioning for accurate gloss measurement
- Air-vortex sheet stabilization on the measurement side of the sheet ensures freedom from sheet marking or damage
- Fast-response sensor electronics support fast scanning to quickly resolve profile changes for tight gloss control
- Stable LED sources provide long operating life and excellent stability for reliable, repeatable measurement
- System-resident video displays support for measurement, calibration and maintenance promotes operator confidence and low lifecycle cost

Accurate Gloss Measuring Principle

The sensor measures gloss using the principle of specular reflectance of visible light at TAPPI 75º gloss measurement angle. It measures visible reflections from one side of the paper sheet. The sensor employs a single head with four data channels that provide two measurements – the gloss measurement of the sheet and a measurement of the cleanliness of the sensor windows. Each measurement has a reference channel and a measurement channel. The signal is

reflected back into the one sensor head, and all of the hardware for the sources and receivers is contained in this single sensor head. The sensor can measure paper gloss with values between 0 and 100 gloss units.

The sensor uses an air-vortex clamp to stabilize the sheet position. This minimizes the influence of sheet flutter and variations in the sheet surface on the measurements. On the measurement side of the sheet, the air-vortex sheet stabilizers provide a 100 micrometer (4 mil) air pad between the sheet and the sensor to prevent sheet marking or damage.



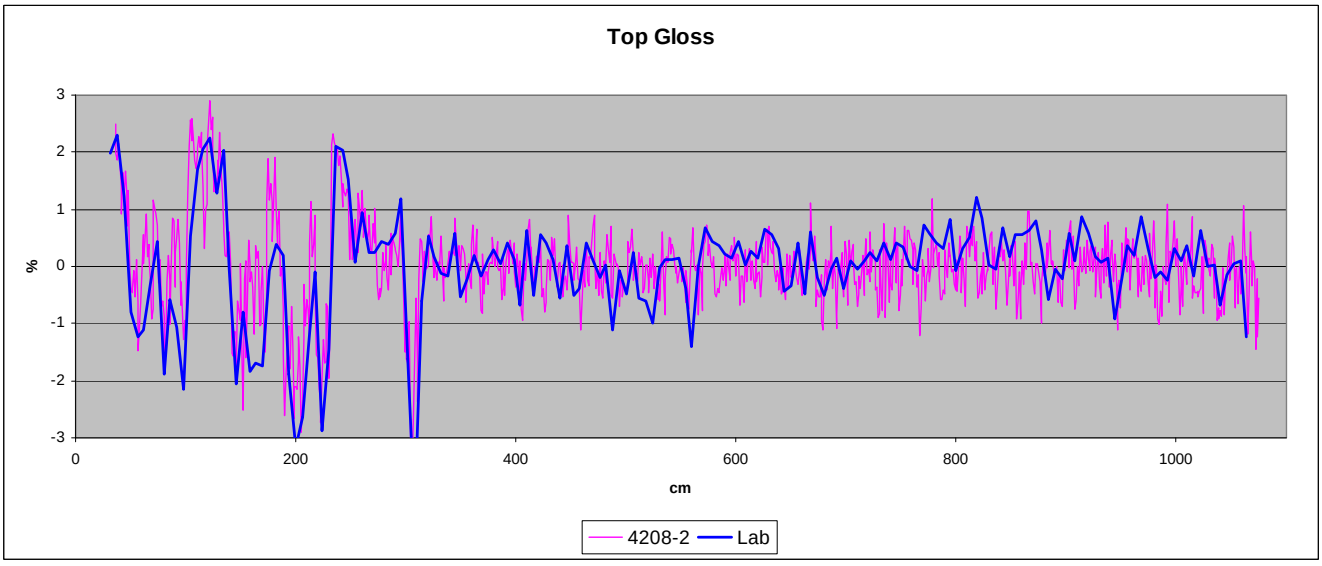
Measurement optical path

Reliable, Consistent Results

Optical configuration for gloss measurement is well established by the TAPPI gloss specification. The Experion MX Gloss Measurement builds on this specification with additional features that enable robust, accurate and reliable online measurement.

The sensor is built of robust, industry standard components. Long-life, extra-bright LED sources are electronically pulsed at 570 Hz (measurement) and 2800 Hz (window-cleanliness compensation) to ensure freedom from ambient-light-induced errors. A separate, dedicated optical system provides continuous, real-time correction for dust buildup on measurement windows.

The temperature stability system serves to improve the sensor's performance and to extend the lifetime of its components.



Excellent profile correlation demonstrated during process upset

Sensor Installation

The Experion MX Gloss Measurement can be mounted to the sheet guides of the head in either the cross direction (for MD measurements) or in the machine direction (for CD measurements). The sensor can face upwards or downwards.

A separate matching sheet guide for the sensor mounts to the Experion MX scanning head sheet guide opposite the sensor head.

Specifications: Gloss Measurement - Model Q4208-52

Measurement geometry:	TAPPI 75º
Measurement range:	0 – 100 gloss units
Repeatability, 2 sigma:	± 0.1 gloss units on laboratory standard
Static accuracy, 2 sigma:	± 0.75 gloss units on paper samples
Dynamic correlation, 2 sigma:	± 0.75 gloss units
Measurement time constant:	< 10 ms
Measurement spot size (MD optics orientation):	CD dimension: 12.5 mm (0.5 in.)
Standardization:	None required
Dimensions, not incl. sheet guides:	450 mm MD x 305 mm H x130 mm CD (18 in. MD x 12 in. H x 5 in.CD)
Maximum ambient temperature:	50º C (122º F)
Coolant temperature:	< 25º C (< 77º F)
Coolant flow:	2 liters/min. (0.5 gpm)
Air pressure:	2.8 kg/cm^2 (40 psi)
Air flow:	60 liters / min. (2 cfm)
Power requirements:	3 amps @ 24 VDC

More Information

For more information on Experion MX Gloss Sensor, visit www.honeywell.com/ps or contact your Honeywell account manager.

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