

CALENDERING APPLICATION REPORT

The Calendering market requires a Quality Control System that is both flexible and configurable. Measurements must often be performed right on the calender roll for fast accurate control. In addition, this industry has become increasingly more competitive resulting in tighter product specifications and more challenging profit margins. Mahlo has responded to these market pressures by providing coating and converting measurement and control solutions for over 25 years.



Mahlo's experience and understanding of the calendering industry has allowed us to tailor web gauging systems for the following processes:

- Rubber Calendering
- Vinyl Calendering
- Embossing Calendering
- Laminating



Manufacturers using Mahlo systems supply to the following calendering industries:

- Automotive Tires, Belts & Hoses
- Agricultural Belts
- Exterior Siding
- Printing Blankets / Pads
- Floor Products
- Gasketing
- Health / Personal Care / Hygiene
- Pressure Sensitive Foam Tape

Among the calendered products manufactured using Mahlo systems are:

- Vinyl Siding
- Tire Inner Liners
- Neoprene Padding and Insulation
- Vinyl Sheeting
- Weatherstripping
- Adhesive Foam Tape
- Gaskets
- Vinyl Flooring
- Matting
- Countertops and Wallcoverings



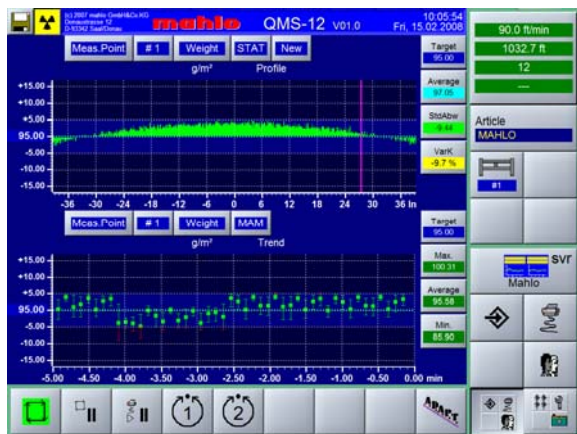


For the entire range of calendered products, Mahlo makes a quality control system tailored to your specific application, for your specific measurement and control needs. Fixed, single-sided and dual-sided scanning platforms are available measuring coatings, basis weight, moisture and thickness plus a myriad of combined calculations either directly on the calender



stack or downstream. Multiple synchronized scanners are available as standard for coating & laminating lines. Automated control integration is possible with our coat weight control capabilities for roll gap, roll skewing, applicator roll speed/ratio, die pump, linespeed and APC (automatic die profile control) to name a few.

Utilizing intelligent sensor and scanner techniques, the Mahlo QMS systems measure on-line continuously and with extreme precision and response. The computer interface is Windows



XP based, is fully open and conforms to industrial communications standards. Ease of use and configurability were built in from the ground up and the menus and functions are very easy to understand with a short learning curve.

One of the many strengths of the Mahlo system is the family of rugged steel O-Frames. We know that these scanners must traverse back and forth around the clock, 365 days per year for many years. Building tough industrial machinery is a forte of German manufacturing, and Mahlo grew up making large-scale machinery for the textile and carpet

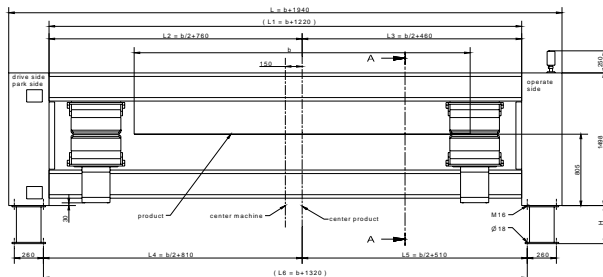
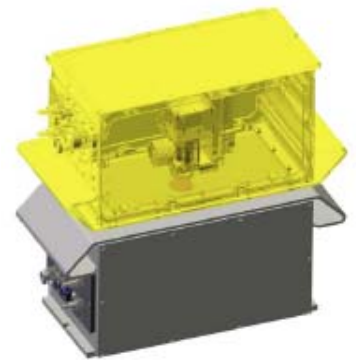
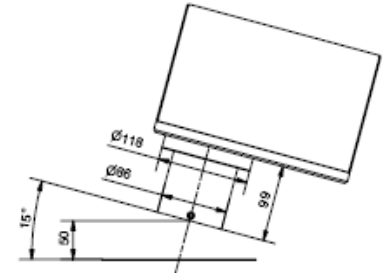
industry, and continues to this day. Over-engineered for long, trouble-free life, yet easy to maintain with commercial components, all Mahlo scanners whether single-sided for Infrared, Laser or X-Ray sensor applications, Compact O-Frames for tight spaces or the WebPro-L O-Frame scanner for those wide web applications and a payload of up to five sensors, are built to last.



Mahlo QMS Quality Control System Offerings

Measurements

Basis Weight	
	<i>Model FMI Beta Transmission Sensor</i>
0 – 200gsm	Promethium-147
5 – 1,200gsm	Krypton-85
50 – 5,500gsm	Strontium-90
	<i>Model FMX X-Ray Backscatter Sensor</i>
Thickness	
<0.001 - 4.00in	<i>Model DML Single-Sided Laser Caliper Sensor</i>
<25 μ - 100mm	<i>Model DML Dual-Sided Laser Caliper Sensor</i>
Moisture	
0.01 - 95%	<i>Model IMF Infrared Absorption Sensor</i>
0.01 - 1000 g/m ²	
	<i>Model HMF Microwave Resonance Sensor</i>
Selective Coatings	
	<i>Model IMF Infrared Absorption Sensor</i>



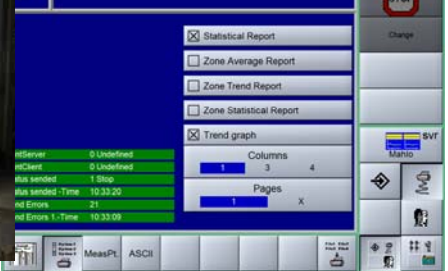
Traversing Platforms

O-Frame Scanners	
Up to 3 meters	<i>WebPro - S</i>
Up to 4.5 meters	<i>WebPro - M</i>
Up to 8 meters	<i>WebPro - L</i>
Single-Beam Scanners	
Up to 3 meters	<i>Uniscan - S</i>
Up to 6 meters	<i>Uniscan - L</i>
C-Frame Scanners	
Up to 4 meters	<i>WebPro - C</i>



Operator Stations

Stand-Alone	Standard Operator Station
IP Desktop	QMS Visualization IP Desktop
Line Control Station	Integrated into Line Operator Station



Options

Auto Die Control ~ SPC/QC Packages ~ Hazardous Ambient Applications

About Mahlo

For over 60 years, Mahlo has built its reputation based on the design and manufacture of rugged, innovative, cost effective on-line monitoring and control technologies. It is our focus to provide our customers with tailored solutions that offer a quick return on investment and are supported by our experienced and responsive technical support team.

Mahlo is headquartered in Saal, Germany, in the heart of Bavaria. We are privately owned by the Mahlo family and take great pride in continuing the tradition of quality-built products based upon German engineering and craftsmanship. Mahlo employs over 300 people worldwide with over 100 sales and service centers in 115 countries.



Mahlo America, located in Spartanburg South Carolina, is celebrating its 40th anniversary in 2008. Our facility, along with a network of sales and service offices through out North America, provide unparalleled customer support and a true commitment to helping our customers improve their manufacturing processes and reduce production costs.

In addition, our U.S. office maintains a comprehensive spare parts inventory and houses a fully operational pilot line with QC laboratory for product testing, sample evaluation, and technical training. The line is capable of processing up to 80" wide webs and is equipped with a full suite of traversing scanners and measurement sensors for detailed evaluation of our on-line web gauging technologies.

Please call us today at (864) 576-6288, or visit us at www.mahloamerica.com.