

PAPERMAKING APPLICATION REPORT

The Paper Tissue and Board market requires a Quality Control System that is both flexible and configurable. Measurements must be performed on both the wet and dry ends 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 paper industry measurement and control solutions for over 30 years.

Mahlo's experience and understanding of the paper, tissue and board industries has allowed us to tailor web gauging systems for the following processes:

- Papermaking
- Tissue Manufacturing
- Board Manufacturing
- Sizing
- Remoisturizing
- Coating
- Impregnating
- Calendering
- Laminating

Manufacturers using Mahlo systems supply to the following paper, tissue and board industries:

- Health / Personal Care / Hygiene
- Printing
- Furniture
- Automotive
- Flooring
- Labeling
- Industrial Clothing
- Gasketing



Among the paper, tissue and board products manufactured using Mahlo systems are:

- Facial Tissue
- Paper Toweling
- Fiber Mats
- Kraft
- Book Hardcovers
- Label Backing

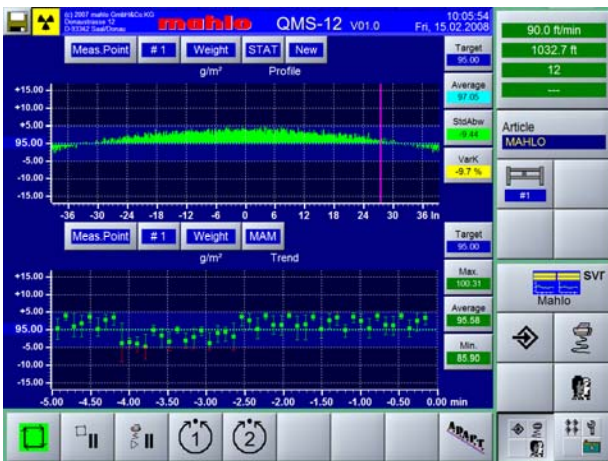




For the entire range of paper, tissue and board products, Mahlo makes a quality control system tailored to your specific application, for your specific measurement and control needs. Fixed, single-sided and dual-sided scanning platforms are available measuring coatings, basis weight, moisture and thickness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

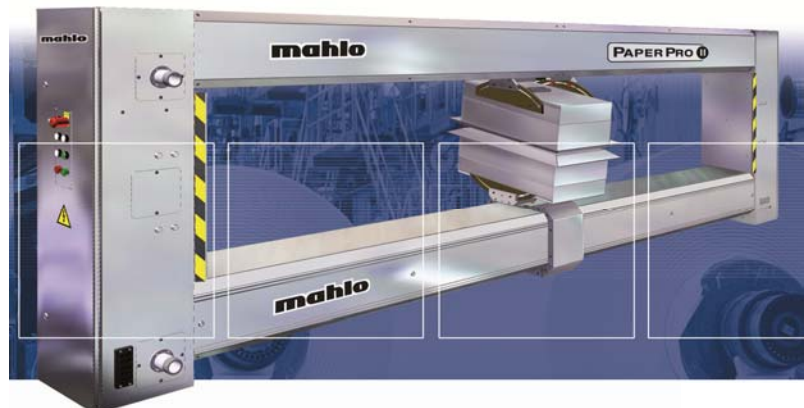


calculations on both the wet and dry ends of the machine. Multiple synchronized scanners are available as standard for coating & laminating lines. Automated control integration is possible through our relationships with major process automation suppliers. Sealed, purged and stainless steel scanners and sensors are available



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 Embedded 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.

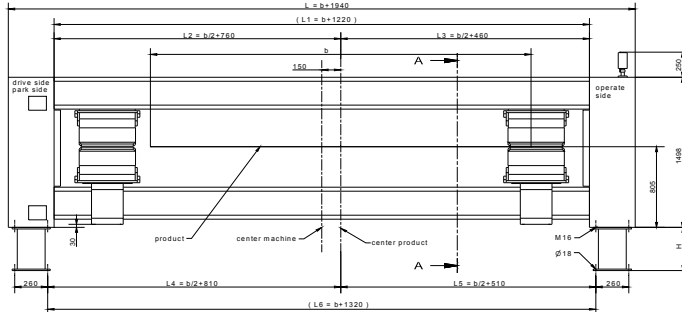
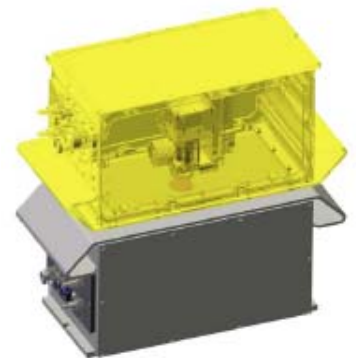
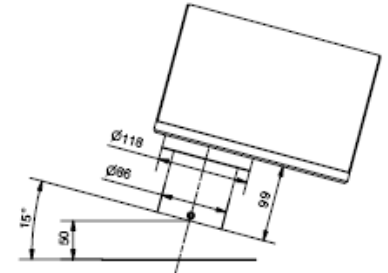
One of the many strengths of the Mahlo system is the family of rugged steel O-Frames. We know that these scanners must traverse back and forth around the clock, 365 days per year for many years. Building tough industrial machinery is a forte of German manufacturing, and Mahlo grew up making large-scale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

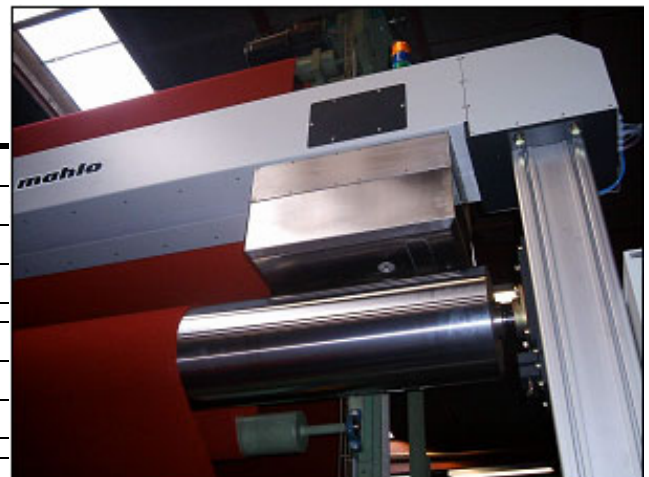
Measurements

Basis Weight	
	<i>Model FMI Beta Transmission Sensor</i>
0 – 200gsm	Promethium-147
5 – 1,200gsm	Krypton-85
50 – 5,500gsm	Strontium-90
75 – 20,000gsm	<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	
Moisture	
0.01 - 95%	} <i>Model IMF Infrared Absorption Sensor</i>
0.01 - 1000 g/m ²	
Selective Coatings	
	<i>Model IMF Infrared Absorption Sensor</i>
Ash	
5 – 40gsm	<i>Model FMA Ash Content Sensor</i>



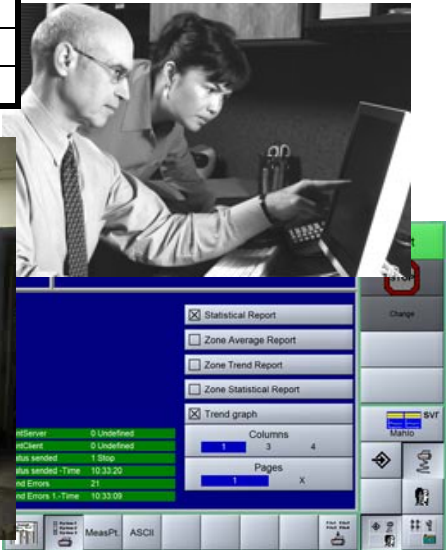
Traversing Platforms

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>PaperPro II</i>
Single-Beam Scanners	
Up to 3 meters	<i>Uniscan - S</i>
Up to 6 meters	<i>Uniscan - M</i>
C-Frame Scanners	
Up to 2 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 Location Applications

About Mahlo

Since 1945, 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, celebrated its 45th anniversary in 2013. 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.