Making a Measurable Difference

Web Gauging Solutions
Our Commitment...

**Investment:** We continually invest in new technologies, services and training programs. Our comprehensive portfolio continues to expand inline with new materials and the requirement for information products.

**Technology:** Our technologies include nuclear, x-ray, infrared and optical measurements, plus an advanced controls portfolio and an intuitive operator interface. All that you need to manage your operations.

**Service:** Reliability, maintainability and low cost of ownership are inherent to Thermo Scientific web gauging systems. Installation and commissioning are fast and efficient with complementary service programs that can be tailored to suite your individual requirements.

**Results:** We help you realize the benefits from our technologies. We relate them to your business in clear, concise terms to get you on the results curve quickly and stay there.
**Expertise & Global Presence**

We are the measurement and control specialists serving the continuous web processing and converting industries. Our success is driven by process knowledge.

Competence and experience are the fundamental components of our strategy. We employ innovative technologies and application-specific solutions to help you reduce costs and improve quality and profitability.

Our extensive global presence ensures that all of our customers achieve the results they expect from a world-class organization.

**Innovation**

Innovation is one of Thermo Fisher Scientific's core values, reflected in our new product brand, Thermo Scientific, which represents the world's leading analytical instrumentation brand.

In 1948 (known then as Tracerlab) we introduced the first beta gauge for basis weight measurement. Later as LFE, we launched the first computer-based systems outside the paper industry.

Then in 1988 (formerly EGS), we offered a unique scanning full spectrum infrared spectrometer (FSIR). And in 2006, we introduced a revolutionary, non-contacting thickness gauge for sheet materials.

**Complete supplier**

Our solutions are designed for your application.
- Extruded film and sheet
- Biax film and sheet processing
- Converted products
- Extrusion, roll & blade coaters
- Building materials
- Non-wovens
- Rubber and vinyl calendering

With over 6,500 systems installed worldwide, Thermo Scientific gauging systems are the clear choice for our customers.
Thermo Scientific Frames and Gauges
...an intelligent, accurate, open measurement system that provides a unique insight into your process

Intelligent Measurement
Each intelligent scanner broadcasts its final measurement values to other compliant systems in an open Ethernet network. The Thermo Scientific Exactrax peer-to-peer network measurement synchronization delivers millisecond-timing precision for accurate inter scanner measurement.

Each scanner incorporates an embedded iBox processor and Linux operating system that provides fast, secure, robust measurement.

Thermo Scientific Industrial Scanners
Reliability, modularity, ease of maintenance and low cost of ownership are of paramount importance. Solid scanner designs assure accuracy and profile repeatability. Installation and routine running costs are reduced, as air, water, nitrogen and proprietary cables are not required.

A unique C-Frame scanner is available where there is restricted space, a harsh environment or when the measurement platform needs to be fully retracted.

Thermo Scientific Basis Weight Sensors
Fast, accurate, repeatable measurement with superior signal-to-noise ratios are shared across the family of basis weight sensors due to their high source strengths.

The slot geometry design gives excellent streak resolution and edge measurement. Proprietary optics reduce x-y-z runout, passline and flutter sensitivity.

Measurement is available in either transmission or backscatter mode depending on the application.
Thermo Scientific X-Ray Master
Its high-energy, collimated source resolves streaks down to 1.25 mm with excellent signal-to-noise ratios. A wide range of application possibilities is available with a measurement air gap ranging from 15 mm to 600 mm.

Thermo Scientific SpectraBeam
This unique sensor analyzes the full infrared spectrum and provides high-resolution web composition measurement. It is an intelligent scanning sensor that can discriminate multiple components with chemical analysis capability of plastics, coatings, non-wovens and composites. It can measure co-extrusion layers, moisture, binders, fiber blend, coating layers and solvent retention. It can be used in both transmission and reflectance modes.

Thermo Scientific Air Caliper
This gauge provides non-contacting thickness measurement with 3 mm streak resolution and a measurement range of up to 12.7 mm. Applications include foam, non-metallic and variable-density products.

Thermo Scientific ShadowMaster™
This optical, non-contacting gauge directly measures the thickness of a material against a roll. An eddy current sensor eliminates any potential runout errors of the roll. ShadowMaster is suited to medium to heavy plastics, rubber, coated substrates, paper, textiles and composite products.

Complete Measurement Solutions:
- Intelligent measurement system with peer-to-peer data communications
- Full portfolio of application-matched gauges
- Unique FSIR gauge for challenging measurement applications
- Broad scope of materials measurement capability
- Reliable, maintainable & robust systems
- Low cost of ownership
From raw material to end product
...we understand web gauging applications

**Extrusion**

**Mono and Bi-Axial Film, Co-Extrusion, Cast Film Extrusion, Film/Sheet Extrusion, Extrusion Coating & Laminating**

We have a wide range of experience with all major makes of extrusion lines. Our comprehensive measurement family of caliper, infrared, nuclear, optical and x-ray sensors and advanced controls is available to address the unique requirements of these applications.

**Biax film** lines, for example, realize their greatest web gauging economic benefits through superior process visibility, responsive controls, fast start-up and product change. Cast and film-end scanning with high-resolution measurement and accurate mapping help deliver these results.

An integrated mass-balance algorithm dynamically compensates for machine (MD) and cross direction (CD) stretch for the cascade and Automatic Profile Controls (APC). This strategy significantly improves MD & CD control performance, reducing film product variation and producing superior roll quality for maximum ROI.

Similarly, co-extrusion and cast film applications benefit from the full portfolio of sensors and controls. Here, SpectraBeam can measure the discrete layers of co-extruded cast film and other layered products.

Automatic sheet edge detection with non-linear asymmetric neck-in dynamically compensates for the multiple shrinkage factors of various polymers. Finally, advanced machine direction and Automatic Profile Control programs help deliver consistent, outstanding results.

Information is important. A comprehensive library of reporting packages including roll reports, historical viewing, archiving and sheet-cut data help eliminate both guesswork and judgments.
**Optimum results**

- Comprehensive library of web gauging solutions.
- Systems optimized for results: measurement, communications, information and systems integration.
- Application-matched sensors with optional integration of third-party measurements.
- Value-added expansions and enhancements for displays, controls, information and compliant third party devices.
- Scalable to a fully integrated process management system.

**Coating**

**Blade Coating, Roll Coating, Extrusion Coating, Tandem Extrusion Coating, Lamination, Saturation, Slot Die**

Typical coating applications include liquid packaging, adhesive coatings, polyethylene, foil, barrier materials, sealants and adhesive layers. In fact we are the world leader in aseptic packaging measurement technology.

Coat weight measurement accuracy is therefore critical for quality, productivity and scrap reduction. Two coat weight measurement solutions are available.

First, the differential coat weight technique provides accurate coat weight measurement with the Thermo Scientific Substrate Independent Calibration, SICAL™. This matches the calibrations of the substrate and coated product scanner. By eliminating the substrate sensitivity, SICAL rationalizes the number of calibration groups to just the coating formulations.

The Thermo Scientific EXACTRAX™ Same Spot Measurement then calculates accurate net coat weights. This ensures that the substrate and coated product scanners traverse precisely the same path on the web, even with line speed variation. Precise scanner synchronization is achieved with network communications between the scanners.

Second, the unique SpectraBeam FSIR is often the only direct coat weight measurement solution for layer discrimination.

Complex measurement applications can include up to six scanners and fifteen sensors.
Delivering experience across a broad range of industries
...translating knowledge into results

Calendering

Vinyl, Gum, Textile, Wire and Rubber Calendering

Vinyl and gum calendering systems incorporate scanning basis weight and thickness measurements with optional stationary sensors.

Accurate profile measurement that is independent of roll condition and line speed is important. The Thermo Scientific SYNCRO-SCAN roll runout compensation synchronizes the scanning measurements to the roll rotation, eliminating short-term machine direction roll variations from profile measurement. This produces fast, responsive, accurate profiles.

Flat final product profiles are assured with three-zone control via roll gap and x-axis or roll bending.

Rubber calendering. This complex process requires a modular measurement and control strategy that can be configured to almost any tire calender. For example, the gum layers of a four-roll steel or textile cord calender are measured using backscatter gauges. Then, either fixed or scanning backscatter basis weight sensors measure the upper and lower single films. Finally, scanning basis weight transmission and backscatter sensors measure the product at the calender exit.

Decoupled optimization controls for the upper and lower films supervise the left and right nips, roll bending and roll cross axis. These controls produce a significant improvement in both quality and product change times.
**Building Products**

**Roofing, Flooring, Abrasives, Carpet Coating, Rockwool, Glasswool, OSB, Carbon Fiber, Fiberglass/Fleece, Insulation Mat**

**Roofing** lines are notoriously hostile measurement environments. Hence, our answer: a reliable stainless steel C-Frame scanner. Add to that SYNCRO-SCAN to eliminate backcoating roll runout and two-zone asphalt control package that delivers flat profiles. The bottom line: product uniformity, reduced scrap, asphalt savings and a sound ROI.

**Flooring, abrasives & carpet coating** materials demand accurate coat weight measurement. Both the SICAL calibration technique and EXACTRAX same-spot measurement help satisfy this requirement.

Further optimization controls include Two-Zone Gap control for flooring, abrasives and carpet materials, plus Auto Profile (APC), and Mid Range Controls for flooring produce superior uniformity and quality.

**Rockwool & glasswool** measurement involves between three to five fixed-point sensors designed for use in harsh environments and display a three point quality trend.

**Oriented strand board & fiberglass insulation** systems employ wide-gap geometry scanning measurements. Fiberglass systems may also measure the constituent components of the insulation materials. A unique reporting package is also available with SPC QC trace-ability using an RQMS module.

**Perfect solutions...**

- Specialty measurements and controls deliver significant incremental benefits
- Environmentally robust measurements for accurate, reliable, low maintenance operation
- Reporting packages satisfy stringent roll quality and full-lot trace-ability requirements

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**Non-Wovens**

**Air laid, Carded, Melt-Blown, Needle-Punched, Spun-Bond, Spun Lace, Wet-Formed**

Non-wovens systems support the full line of Thermo Scientific sensors for specialty measurements within this industry. In particular, SpectraBeam FSIR measurements include super-absorbent polymers used in hygienic applications and resin binders found in fiberglass mat.

**Needle-punched** measurements are similar to rockwool systems, with a plurality of fixed-point sensors across the web.

The non-wovens applications portfolio supports the stringent reporting requirements for roll quality with full-lot trace ability.
Service: global project responsibility
...throughout the life cycle of your system

Delivering sound solutions for your service requirements

Project services; making it happen

Our Project Service Management Team comprises skilled, experienced engineers, accustomed to managing a broad range of solutions worldwide. Our teams are there to commission your system from kick-off to handover.

Whatever the platform or application, their experience covers a wide range of process and materials technologies.

Keeping your system at optimum performance

Technology does not stand still. And neither should your system. With countless commercial enhancements being released on a daily basis, you want to ensure that your system benefits from these.

Our Lifecycle Program helps your system to deliver peak performance with the latest enhancements and upgrades; keeping you on the leading edge of the results curve.

Service products tailored to suite your needs

Thermo Scientific web gauging systems are built on commercial platforms, making them inherently reliable and easy to maintain. Our portfolio of service products is designed to suit the needs of your operations, ranging from emergency callout to full service supported by qualified, trained engineering experts that are responsive to your needs.

Service solutions that address the bigger picture

Sometimes you need more than just service for your systems. Instead you need process solutions and expert services.

As your service partner, we are able to provide a multi-disciplined approach. So whether it’s operations or optimization, we are there to help you make the grade.

Service that works for you

- Project services from order to handover
- Comprehensive portfolio of service products
- Life cycle system enhancement and upgrade programs
- Global spare parts logistics that deliver the right part to your plant without delay
Our expertise: turning technology into profit
...a results partnership for your benefit

An efficient installation combined with high system reliability, accurate measurements and tight control are your foundation for sound results.

Results that travel to your bottom line

The success of your web gauging project is assured with our applications expertise. Our team brings a wealth of process knowledge to your operations to help produce superior results from your system.

The foundation for this rests on our innovative technologies, project management skills, service competence and applications knowledge.

By working with every level within your plant, our team can professionally manage your project in order to deliver the best return on investment for the lifecycle of your system.

Quality production

- Reliability
- Accuracy
- Advanced Controls
- Information
- Results