

NONWOVEN INDUSTRIES



Advanced Web
Gauging Solutions



NDC's Nonwovens Systems:

Addressing quality and productivity for outstanding results from your process



▶ Spunbond / SMS

▶ Spunlace

▶ Airlaid, Carded and Hybrid Nonwovens

▶ Needle Punch

▶ Wet Laid

Successful nonwoven manufacture depends on producing quality fabrics efficiently. For example, accurate measurement translates into greater yield from the raw materials. It also reduces lost time and scrap during product change and at start-up. This all adds up to greater quality, productivity and efficiency that helps drive plant profitability.

NDC's web gauging platforms represent an opportunity to assist the nonwovens business. Its sensors offer extensive measurement capability with form factors that provide process visibility from critical parts of the line. By combining controls that produce continuous quality and an operator interface that provides real time information, NDC's solutions help ensure optimum line performance and a sound return on investment.

Customer Benefits:

- ▶ Higher quality and productivity
- ▶ Lower manufacturing costs
- ▶ Improved process visibility

Accurate Measurement Performance

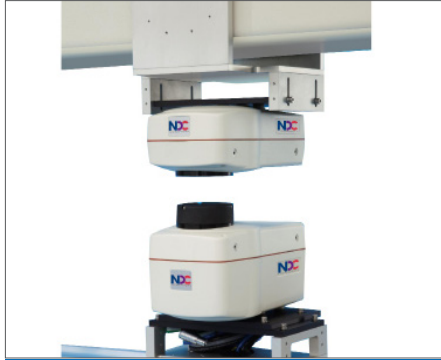
A complete gauging portfolio
for the entire nonwovens process



▶ Transmission Beta

NDC's Beta transmission gauges feature an ultra high-efficiency detection system and a minimized source activity for safety and performance.

Beta gauges measure the basis weight of airlaid carded and spunbond/SMS nonwoven products.



▶ NW710S

NDC's NW710S Infrared sensor can measure the basis weight and moisture for specific nonwovens. Its unique optics collect forward-scattered light that has interacted with the nonwoven material.

Applications include PP spunbond and meltblown nonwovens.



▶ Gamma Backscatter

NDC's Gamma BackScatter (GBS) gauge family provides a cost-effective basis weight measurement. This compact sensor can provide valuable measurements from difficult process locations.



▶ Laser Thickness

NDC's laser gauges measure thickness via a distance triangulation computation of a laser beam.

Laser gauges are typically designed to measure thick nonwoven products. The thickness measurement range for NDC's single-sided sensor is 50 mm, while the dual-sided range extends to 15 mm.



▶ X-Ray Transmission

NDC's X-ray transmission sensor's energy source is tuned for optimum product measurement sensitivity to provide precise measurement of basis weight or thickness for nonwoven products.

X-ray transmission gauges can be used on most nonwovens processes.



▶ X-Ray Backscatter

The X-ray backscatter sensor's compact footprint permits it to be installed in difficult measurement locations on the process.

The X-ray backscatter sensor is designed to measure the basis weight of spunlace, carded, airlaid & hybrid nonwoven products.

Company overview

Combining industry-best performance and reliability with a global support structure

NDC Technologies, based in Irwindale California, develops and manufactures measurement and control equipment for a wide range of process industries. The company also manufactures in Essex, UK, Dayton, Ohio and has a Technical Center of Excellence in Loncin, Belgium with direct sales and support operations in China, Japan, Germany, France, Italy and Brazil.

Our global client base consists of some of the world's most successful companies who rely on NDC to ensure that their product performance, process yield and quality meet the stringent standards demanded by their customers.

NDC comprises four divisions:

Web Solutions service the converting, extrusion, calendering and nonwovens industries, providing real-time measurement of key product parameters such as product thickness, coating thickness & basis weight.

Sensors service the food, chemical, pharmaceutical, mineral, bulk materials and tobacco industries with on-line and at-line measurements system for constituents such as moisture, fat and protein content.

Metals service the steel and non-ferrous metals industry, delivering rugged measurements systems for key parameters such as thickness, width, flatness, edge shape and metals coatings.

Laser and Ultrasonics produce non-contact gauges for the on-line and off-line measurement of diameter and ovality, wall thickness and eccentricity, length and speed, and other dimensional monitoring of products in the wire and cable, fiber optics, pipe and tube, building, nonwovens, paper, plastic, and metals industries.

NDC is part of Spectris plc, the leading supplier of productivity-enhancing instrumentation and controls.



NDC is represented in over 60 countries worldwide. ISO9001:2008 www.ndc.com

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Rugged, Reliable, Maintainable Scanners

High performance intelligent scanners for fast, accurate measurement

NDC's AccuTrak scanner supports a multiple sensor payload for complex nonwoven applications.

...while NDC's compact MiniTrak scanners provide cost-effective performance to deliver high-quality nonwoven products.

NDC's **AccuTrak O-Frame** scanner has been specifically engineered for today's stringent quality requirements. Its rugged design utilizes a revolutionary head carriage bearing system that provides long-term precise, repeatable measurement performance.

This intelligent iFrame™ scanner delivers fast, accurate, reliable measurement that is tightly integrated into an intelligent distributed web gauging architecture from NDC. Spanning four decades of experience in the industrial measurement and control industry, the AccuTrak O-Frame scanner provides unmatched performance and a low cost of ownership.

AccuTrak O-Frame Scanner



NDC's **MiniTrak** scanner family offers fast, accurate, reliable measurement that is tightly integrated into an intelligent, distributed web gauging architecture from NDC.

The MiniTrak O-Frame scanner supports up to two quality sensors, for example the intelligent backscatter, reflection and/or transmission iSensors™ from NDC. The 8" box section structure enables this compact scanner to fit into some of the most demanding process locations, while the top mount transport carriage prevents scanner debris from falling onto the sheet.

MiniTrak O-Frame Scanner



The MiniTrak S-Frame supports both the backscatter and reflection family of intelligent iSensors™ from NDC. This frame is compact, robust and supports up to two scanning intelligent iSensors. It requires minimal installation space and can provide critical measurements from difficult process locations.

MiniTrak Single-Sided Scanner



Proven, Capable Solutions

NDC nonwovens industry expertise

...a solution for each application

► Nonwoven Applications

Spunbond/SMS:

With 12 different sensor designs utilizing 5 different measurement technologies, NDC can provide the optimum measurement solution across the entire family of spunbond/SMS applications.

Spunlace:

Based on its repeatability and accuracy performance, NDC's X-ray backscatter (XRB) represents the ideal measurement sensor for spunlaced and medical-hygiene products. Also, when combined with the NDC710S infrared sensor, basis weight and moisture can be measured and controlled.

Airlaid, Carded and Hybrid:

Application-matched NDC sensors provide most all of the on-line measurements that are required within the airlaid, carded and hybrid nonwovens markets. This includes basis weight, moisture, special treatments, coating, lofting density and film lamination.

► Nonwoven Controls

Machine Direction & Cross Direction

Controls:

NDC control options include basis weight, moisture, thickness, treatments and coatings. These controls can be used to optimize raw material consumption, energy optimization and productivity.

► System Options

- FFT (Fast Fourier Transform) analysis
- SPC quality reporting
- 3D profile analysis displays
- System integration: NDC's web gauging systems can be integrated with SCADA systems, metal detectors, web inspection equipment and OEM controls using OPC connectivity.

Sensor	Range	Application
NW710S	8-90g/m ²	Transmission IR measurement Polypropylene basis weight Spunbond/SMS basis weight
NW710S	0-5% moisture	Transmission IR measurement Spunbond/SMS moisture
NDC710S	0-90% moisture	Single-sided IR measurement Moisture measurement
NDC710S	0-1000g/m ²	Single-sided IR measurement Speciality coating and treatment measurements
NDC's advanced infrared and X-ray non-nuclear technologies offer superior performance that is ideal for most hygienic applications.		
Beta 302	12-1200g/m ²	Basis weight or thickness measurement Airlaid Carded Spunbond/SMS
XRB 318	5-25,000g/m ²	Basis weight measurement Spunlace Carded Airlaid & Hybrids
XRT 312A	5-8000g/m ²	Basis weight measurement PET Spunbond/SMS
X-Ray sensors offer a non-nuclear alternative with minimal licensing issues and provide measurement across a wide range of nonwoven applications		
Laser 172, 2 Sided	0-15mm	Thickness measurement
Laser 170W, 1 Sided	1-50mm	Thickness measurement
Laser gauges are available for nonwoven processes where density is not constant and true thickness measurement is required.		
Laser gauges are intended for use on thicker product applications		
GBS 103	0-1500g/m ²	Backscatter basis weight measurement
The GBS (Gamma Backscatter) or OptiMike gauges can be installed in limited space locations and where a low-cost measurement solution is required		