Specifications

Linescanner	LSP$_{HD}$ 60	LSP$_{HD}$ 61	LSP$_{HD}$ 71
Measurement range	20 to 250°C 68 to 482°F	50 to 400°C 122 to 752°F	50 to 350°C 122 to 662°F
Spectral response	3 to 5µm	3 to 5µm	3.4µm
Scan angle/samples	80° (software adjustable to 40°) / 1000 temperature samples each scan		
Scan speed	Adjustable, 10 to 150Hz (in 1Hz steps)		
System accuracy	±2°C / 4°F		
Repeatability	±5°C / 0.9°F		
Emissivity	0.20 to 1.00		
Focus/field of view	Target distance: <1200 mm / 47.2 in, target size 12 mm / 0.5 in		
	Target distance: >1200 mm / 47.2 in, Field of view 100:1		
	Note: Field of View figures are static to 95% radiance		
Power in/Data out	Power-over-Ethernet IEEE 802.3at (single cable)		
Ambient temperature	5 to 60°C / 41 to 140°F (specified), 5 to 70°C/ 32 to 158°F (operating)		
Dimensions (w x h x d)	206 x 209 x 100 mm / 8.1 x 8.2 x 3.9 inches		
Alignment	Built-in alignment laser aids in easy installation		
Environmental Sealing	IP65 / NEMA 4		
EMC	EN 61320:1999 Class A (immunity and emission); IEC 1010 (safety)		

LAND

Non-Contact Temperature Measurement Solutions

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For a full list of international offices, please visit our website.

UKAS CALIBRATION 0034 — Applies in the UK

UKAS QUALITY MANAGEMENT 001 — Applies in the USA

LABORATORY ACCREDITATION BUREAU ACCREDITED ISO/IEC 17025:2005

REGISTERED ISO 9001 MANAGEMENT SYSTEM

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Continuous product development may make it necessary to change these details without notice.

Nonwov (US)/0810

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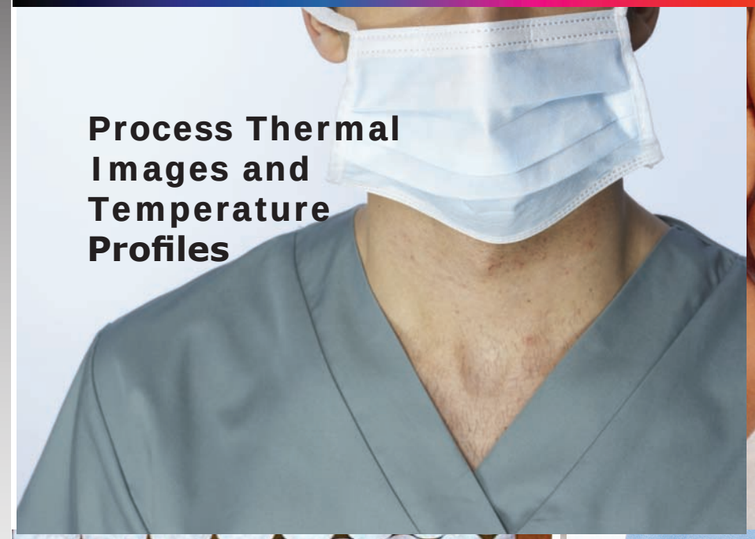
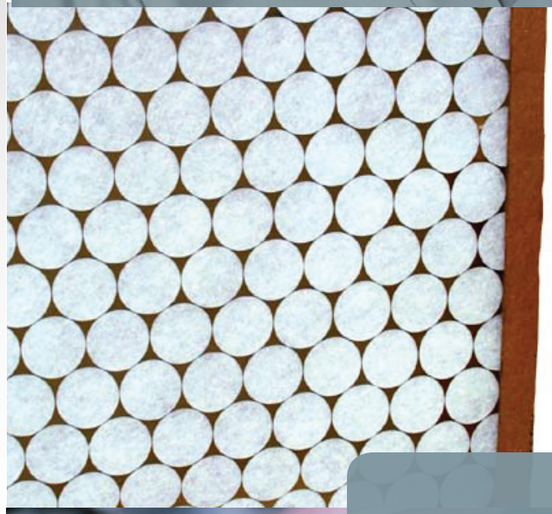




Nonwovens Web Production

Producing Nonwovens Materials

Nonwoven materials are in every aspect of our lives; from air filters to hand wipes, hospital gowns to diapers.
Two methods of nonwoven production pose temperature measurement challenges. The wet laid process involves depositing a layer of fibers in an aqueous solution onto a drying cylinder or mesh. From this point, the wet web is progressively dried and finally rolled.
Some nonwovens are laminated together using heat bonding or glueing methods. A continuous bead or seal of the bonds is most important to maintain the quality of the final product.

The Problem

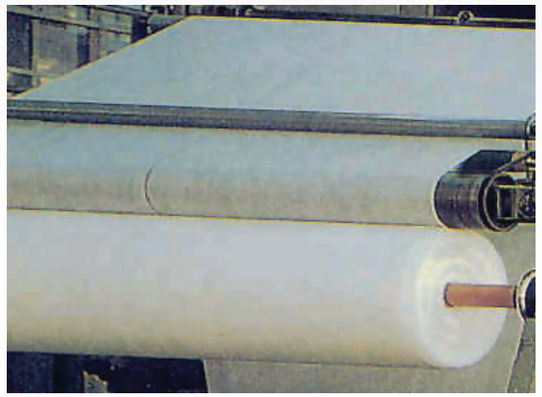
During the manufacturing process a number of issues may arise that can affect the quality of the end product:

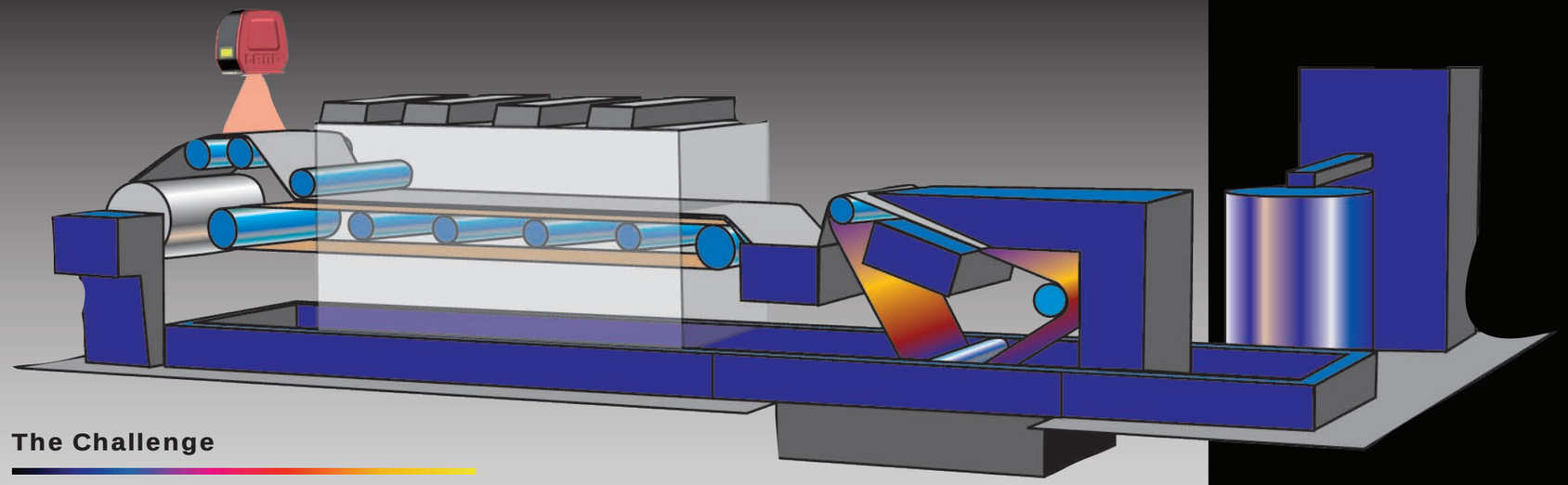
Wet-laid

- If the web is insufficiently dried or has random wet spots, this can cause mold growth thereby rendering the material useless
- Mites can be attracted to incorrectly dried material

Lamination

- Glue nozzle clogging leading to gaps in the glue lines resulting in an incorrectly sealed product.





The Challenge

It is important to find a method of continuously monitoring the whole product that is non-invasive.

- Detection of regions on the web which are still wet at the finish of the drying cycle
- Regions of the laminated product that have been incorrectly glued can be easily detected.

Disadvantages of Traditional Detection Methods

Visual Inspection

- Highly subjective - unreliable detection
- Non-continuous - only samples are tested
- Expensive - requires a skilled operator

Single Spot Measurement

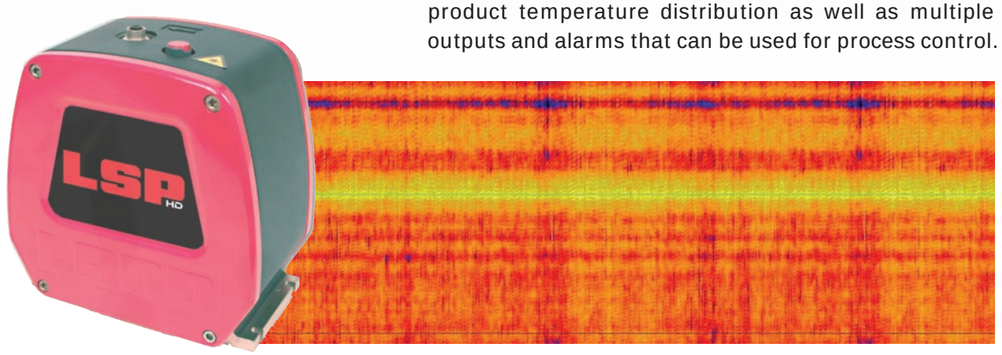
- Requires multiple systems to see a larger area
- Typical sensors have poor resolution and slow response

The LAND Solution

LAND offers a non-contact linescanning solution that combines high speed infrared temperature measurement with a high resolution optical system to continuously monitor the whole of the product as it passes by its field of view. The resulting output is a “thermal image” that clearly shows hot and cold regions on the product, allowing identification of wet areas or areas with no adhesive.

The linescanner is designed for continuous use as well as simple installation. Its quick release mounting bracket facilitates quick fitting and removal. A single cable Power-over-Ethernet connection simplifies and reduces installation costs. The infrared window is flush and flat to prevent dirt buildup and is made from durable sapphire to resist scratches or damage from heat or solvents.

LAND’s solution provides both visual indication of the product temperature distribution as well as multiple outputs and alarms that can be used for process control.



Features and Benefits

- **Quality assurance** - high speed scanning coupled with wide scan angle and a high resolution optical system enable the whole product to be monitored ensuring quality of the complete product
- **Reduce Waste and Scrap** - High resolution sensor enables fast detection of product defects and indication of blocked glue nozzles
- **Reduced Costs** - Reduced requirement for manual inspection
- **Low Ownership Costs** - Simple installation and minimal maintenanace; this system integrates a rugged optical system coupled with highly reliable signal processing and a single cable connection
- **Flexible Integration** - Provides a range of signal outputs including 4/20mA, levels alarms, visual representation and digital communications protocols for simple integration into the plant control system

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