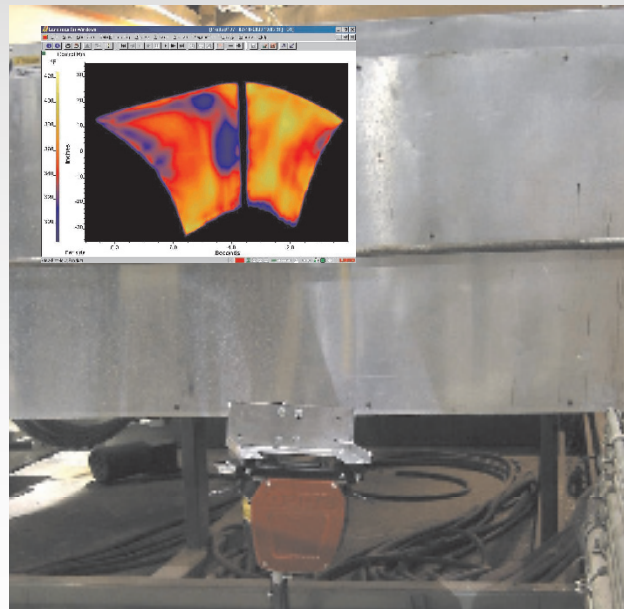


Specifications

Linescanner	LSP _{HD} 61	LSP _{HD} 71
Measurement range	50 to 400°C 122 to 752°F	50 to 3500°C 122 to 662°F
Spectral response	3 to 5µm	3.4µm
Scan angle	80°	
Scan speed	10 to 150Hz (in 1Hz steps)	
System accuracy	±2°C / 3.6°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	
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)	

More reasons why should you use Landsan

- LSP_{HD} offers the highest resolution scanner available. LSP_{HD} operates at 150Hz with 1000 measurements/line - 150,000 samples/s.
- The ambient operating temperature of the scanner head is rated to 60°C/140°F without the need for additional cooling.
- Mounting accessories extend operation up to 100°C/212°F.
- An extremely robust, flat, flush sapphire protection window, enables operation for many years without replacement and costly maintenance.
- A built-in laser sighting facility as standard provides indication of the scan plane and angle for ease of installation.
- The scanner can be readily removed from the tool-free mounting plate, and without changing the alignment.



Scanner mounted below the sheet on a thermoforming machine. Inset shows typical thermal profile before correction.

LAND

Process Thermal Images for Thermoforming Applications



Thermoforming



LAND

Land Instruments International Ltd • Dronfield S18 1DJ • England
Email: land.infrared@ametek.co.uk • www.landinst.com • Tel: +44 (0) 1246 417691 • Fax: +44 (0) 1246 410585

AMETEK Land, Inc. • 150 Freeport Rd • Pittsburgh, PA 15238 • U.S.A.
Email: irsales@ametek.com • www.ametek-land.com • Tel: +1 (412) 826 4444 • Fax: +1 (412) 826 4460

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

Non-Contact Temperature Measurement Solutions



An AMETEK Company

Applies in the UK

Applies in the USA

Plastics Thermoforming Process

Consistent, accurate temperature information is critical in the thermoforming process to ensure that the finished product is correctly formed. Low forming temperatures produce stresses in the formed part and temperatures that are too high can cause problems such as blistering and loss of color or gloss.

The new Landscan Thermoforming Software is specifically designed to provide critical process information including live user-configurable displays, process control system interfaces and product database/statistical summaries for Quality Assurance purposes.

Landscan thermoforming Software provides high precision measurement of the individual zone temperatures on plastic sheets in roll-fed and cut-sheet In-Line machines.

On rotary machines, the software can calculate and correct image distortion caused by the rotary movement, enabling accurate determination of zone heater temperatures.

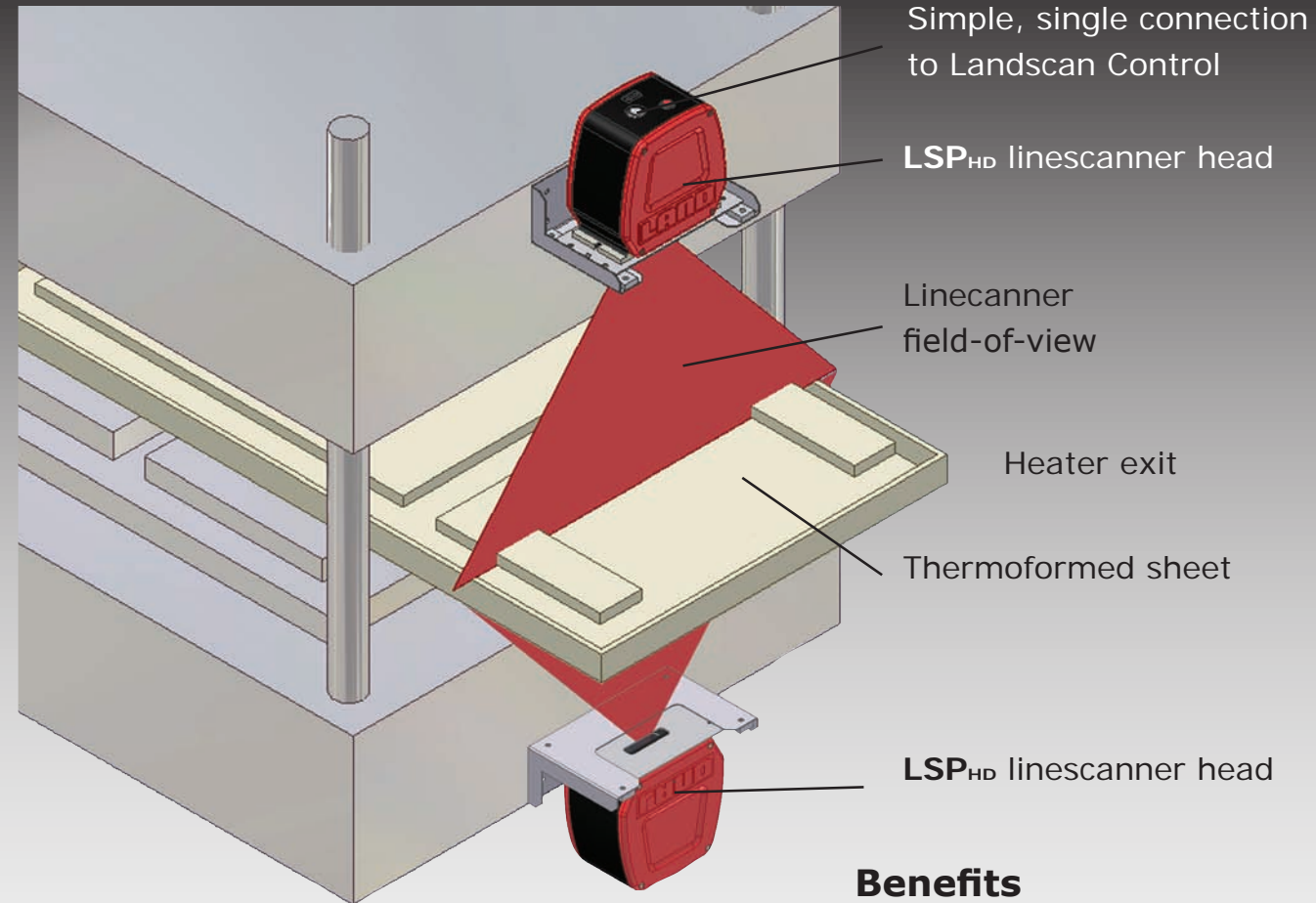
Accurate measurement of the sheet temperature, as it exits the thermoforming oven, provides temperature data for the oven heating control system in order to achieve the required temperature balance across the sheet.

Heater zone and Product Area - Simple, selectable zone adjustment using either global or individual zone settings. Merge and delete zones and set position and size of the sheets. Heater zone temperatures are available via OPC

Displays - Map, 3-D map and profiles. 2-D map with overlay of the heating elements and temperature indication for each zone, on the relevant product area

Product Detection - Either by hot edge temperature or triggered by a digital contact from the machine

Input/Output - Zone data is available as analog outputs with additional alarm settings

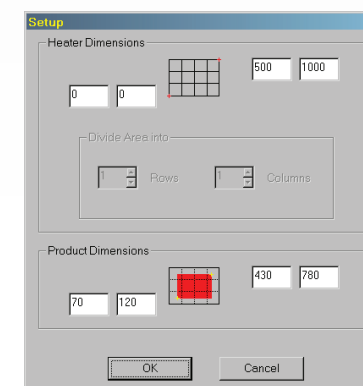


Features

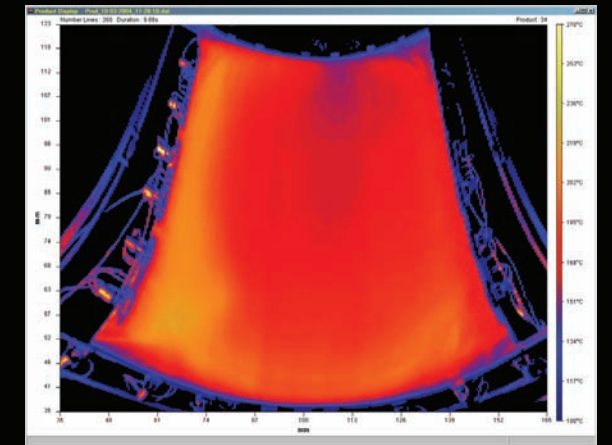
- Simple installation with customized configurations
- Extensive storage, display and analysis capabilities
- Process temperature data from multiple sensor heads, and database and archive files simultaneously
- Display thermal images and temperature profiles
- Displays include: thermal map, profile, 3-D, two independent zone models, centre-line deviation, subtracted thermal map and envelope profile
- Spot temperatures analyzed at any point
- Detailed user-defined zone temperature analysis
- Flexible, digital and analog Input/Output options

Benefits

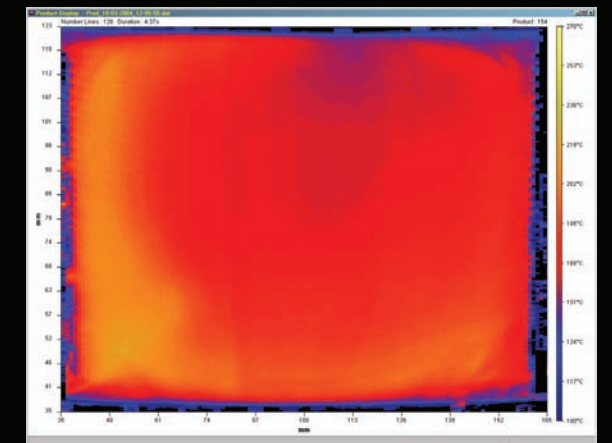
- Perfect for in-line and rotary machines
- Rapid adjustment of heaters for proper heating of sheet
- Improve product quality and operating profitability
- Detect product defects and failed heating elements quickly
- Automated quality monitoring
- Reduced set-up time and scrap rate
- Split, merge or override individual heater segments



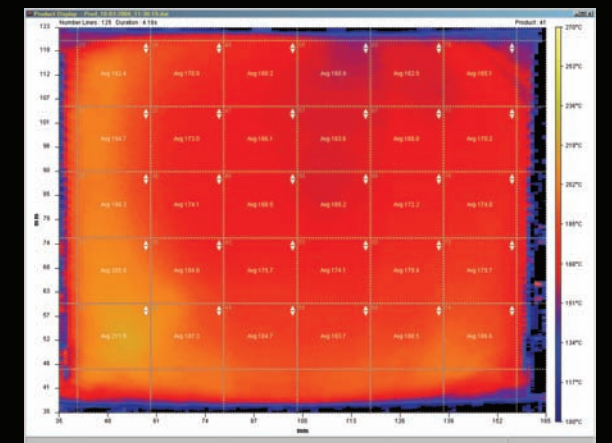
Simple setup of heater matrix and product dimensions



Uncorrected thermal map of heated plastics sheet exiting a rotary thermoforming machine



Thermal profile after correction applied by the Landscan Thermoforming software



Corrected thermal profile with over lay of heater zones

LAND