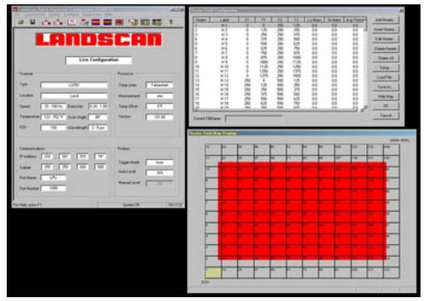
## More reasons why should you use Landscan Pro

- Landscan Pro offers the highest resolution scanner available. LSP operates at 100Hz with 1000 measurements/line - 100,000 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 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.




## Specifications

| Type: | LSP61 | LSP71 |
|---|---|---|
| Measurement range: | 50 to 400°C/ 122 to 752°F | 50 to 350°C/ 122 to 662°F |
| Plastics type: | Thick sheet | Thin sheet |
| Scan angle: | 80° | |
| Scan speed: | 10 to 100Hz (in 10Hz steps) | |
| Spectral response | 3 to 5µm | 3.4µm |
| System accuracy: | ±2°C/3.6°F | |
| Repeatability: | ±0.5°C/0.9°F | |
| Temperature resolution: | ≤2°C/3.6°F (100-150°C /212-272°F) ≤1°C/1.8°F (>150°/272°F) | |
| Target width: | 12mm/0.5in at <1200mm/47.2in; FOV 100:1>1200mm/47.2in | |
| Emissivity: | 0.20 to 1.00 | |
| Ambient temperature: | 5 to 60°C/41 to 140°F | |
| Alignment laser: | Class 2, max. output 1.0mW | |

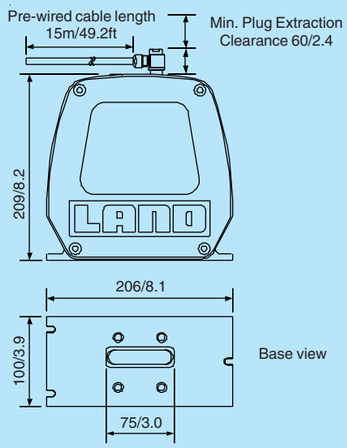
### Landscan Control Processor

| | |
|---|---|
| Resolution: | 12-bit |
| Temperature samples: | 1000 per line |
| Output refresh rate: | Up to 100Hz (equal to scan rate) |
| Inputs: | Fast temperature, scan valid, trigger input, head internal temperature |
| Power requirement: | 100 to 240V a.c., 50 to 60Hz, 50W |
| Features: | Diagnostics LED's Easily set IP address |

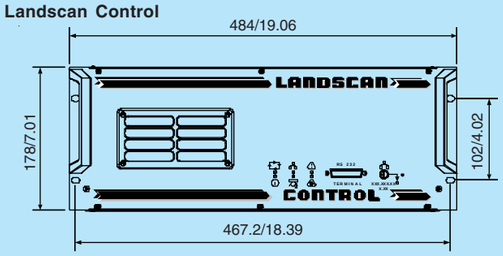
## Dimensions

Dimensions in mm/in

### LSP Linescanner Head




### Landscan Control




The Quality Management System of Land Instruments International Ltd. is approved to BS EN ISO 9001:2000 for the design and manufacture, stockholding, in-house repair and site servicing of non contact temperature measuring instrumentation. Associated software designed and developed in acordance with TickIT. Calibration certificates are available from our UKAS Accredited Calibration Laboratory No. 0034. The Land Calibration Laboratory complies with the requirements of the international standard BS EN ISO/IEC 17025.

CE These products comply with current European directives relating to electromagnetic compatibility and safety (EMC directive 89/336/EEC; Low voltage directive 73/23/EEC).

0034

LAND instruments international

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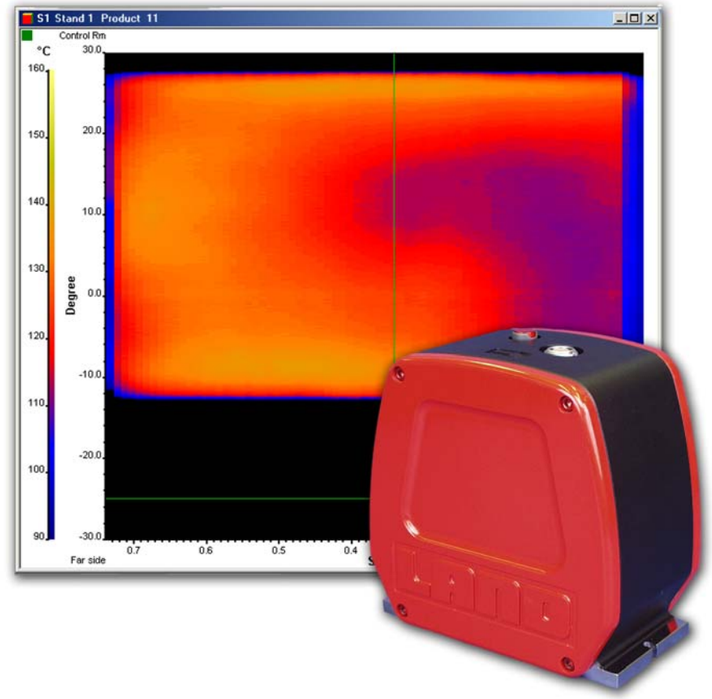



# LANDSCAN PRO

# Infrared Linescanners

## The Process Imaging Systems for Thermoforming Applications

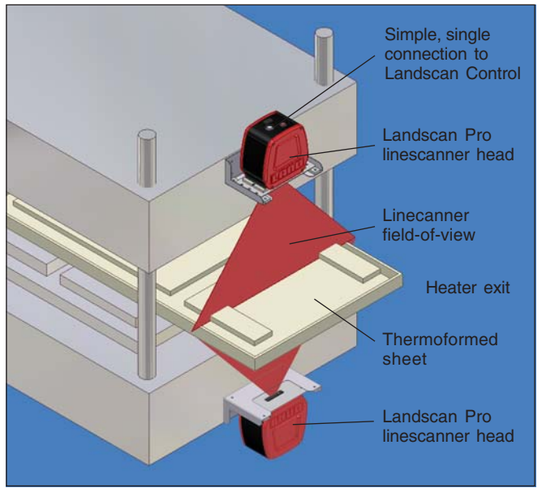
# *INFRARED LINESCANNING SYSTEMS FOR THE PLASTICS THERMOFORMING INDUSTRY*

# LANDSCAN PRO

***Landscan Pro . . . new infrared linescanning systems . . . provide accurate visualization of temperatures in plastics thermoforming applications.***

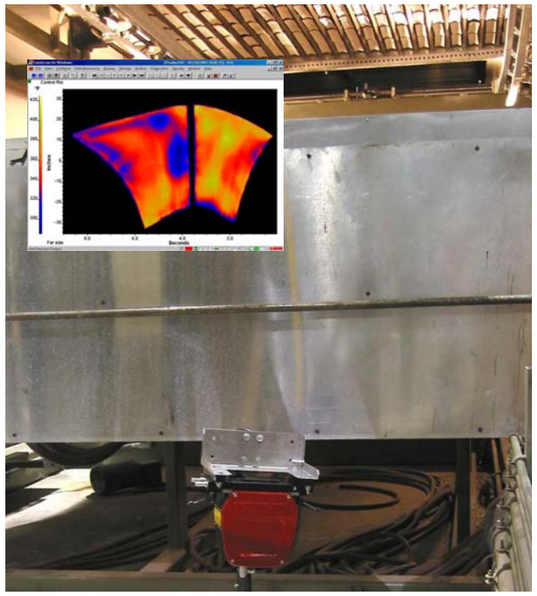
### *BENEFITS*

- *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*




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

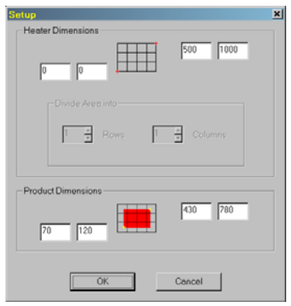
The new Landscan Thermoforming Software is specifically designed to provide this critical information, through, for example, live user-configurable displays, process control system interfaces and product database/statistical summaries for Quality Assurance purposes.



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

### *FEATURES*

- *Simple installation with customised 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*




*Simple setup of heater matrix and product dimensions*

# *VISUALISE THE TRUE TEMPERATURE IN YOUR THERMOFORMING PROCESS*

**The new Landscan Thermoforming System allows thermoformers to monitor and record the temperature distribution of plastics and improve operating efficency and product quality.**

The Landscan processor and thermoforming Software, used with Landscan Pro infrared linescanners, provides high precision measurement of the individual zone temperature distribution on plastics sheet produced by rotary thermoforming machines.

The software calculates and corrects for the distortion of thermal profiles caused by movement of the heated sheet on rotary machines during the thermoforming process, allowing accurate determination of zone heating temperatures.

Distortion occurs in a conventional image when the heated sheet indexes out of the oven, and traverses through the linescanner field-of-view.

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 thermal profile in each zone.

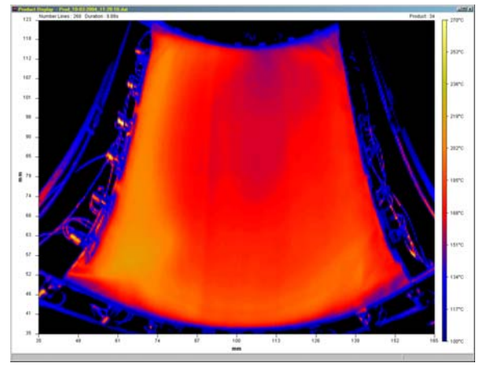
***Heater zone and Product Area*** - Simple, selectable zone adjustment using either global or individual zone settings. Merge and delete zones and set position and size of the sheets.

***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.

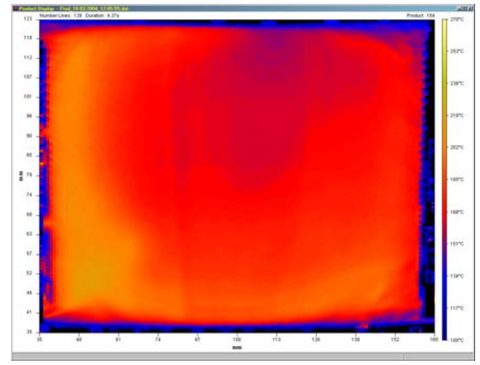
***Product Detection*** - Either by temperature or triggered by a digital contact.

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

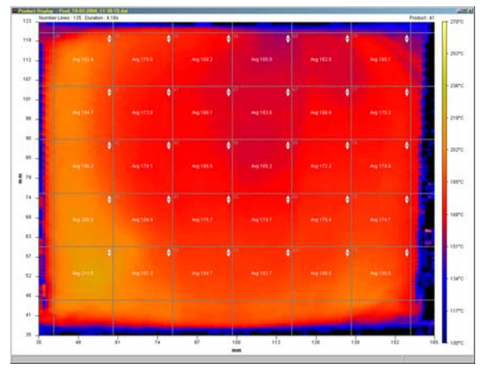

*LSP Pro scanner head and Landscan Control signal processor*



*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*