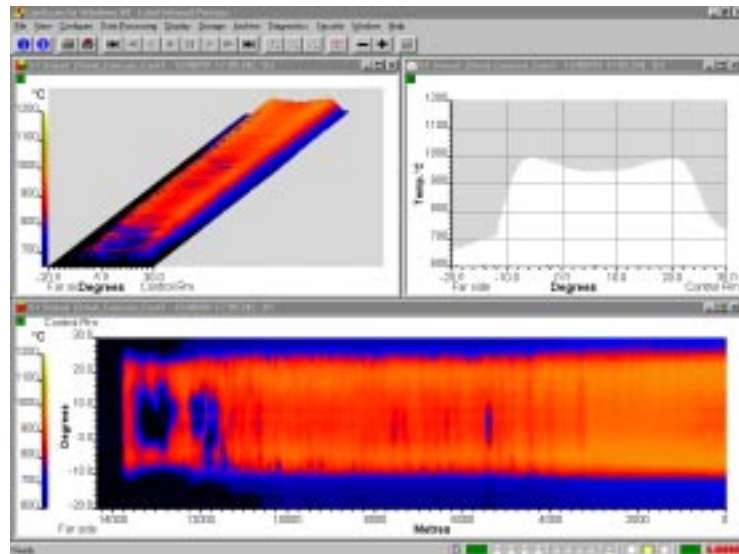


Typical multiple Landscan NT screens - showing a combination of profile, 3-D and thermal maps.



APPLICATIONS

LANDSCAN is increasingly being used to solve temperature measurement problems in a wide variety of industries and applications, some of which are listed below:

- **Hot strip and hot plate mill**
Rougher, edge heaters, coil box, finishing stands, gauging cold correction, coiler
- **Beam, billet and sections mill**
Rail head, beam roughing and finishing, gauging cold correction
- **Rod/wire mill**
Pre-coiler, cooling conveyor
- **Continuous, thin strip and aluminium casting**
Spray chamber, rougher and induction heater exit, crop shear
- **Reheat furnace**
Furnace exit
- **Welding**
Turbine shaft and induction pipe welding
- **Galvanizing**
Snout, furnace, top roll
- **Galvanneal**
Entry dip, top roll
- **Continuous annealing lines**
Cooling and heating
- **Glass**
Float, forming and toughening
- **Paper**
Web and roll
- **Research and development**

For further information or free advice on your specific temperature measurement problems, contact your nearest **LAND** office.

PRODUCT ASSURANCE

When you specify **LAND** products you are assured of receiving a completely pretested, calibrated working product. Each instrument is carefully checked to ensure complete compliance with specification and is fully guaranteed. **LAND** was the first manufacturer of infrared instruments to successfully obtain ISO 9001 Quality Management System Approval for both design and manufacture of non contact infrared temperature measuring equipment.

The quality management system of Land Instruments International Ltd. is approved to BS EN ISO 9001. Stockholding of the Minolta/Land Cyclops range of portable thermometers is covered by BS EN ISO 9002. Calibration Certificates are available from our UKAS Accredited Calibration Laboratory No. 0034.

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



LAND

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Infrared Temperature Measurement

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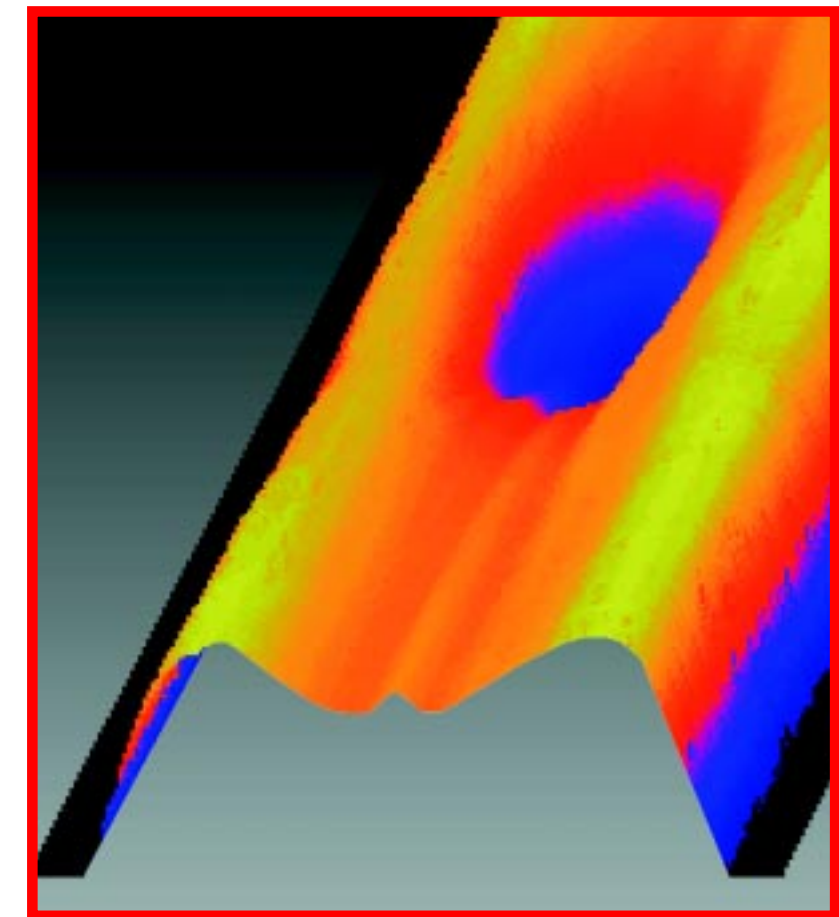
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LAND



LANDSCAN

INFRARED LINESCANNING ON THE HOT ROLLING MILL



LANDSCAN

INFRARED LINESCANNING SYSTEMS

Landscan . . . the world's leading infrared linescanning system . . . excels in Hot Rolling Mill applications - this is evident from over 150 Landscan installations worldwide.

Efficient production of high grade steel strip, for use in automotive body parts and white or brown goods, is reliant upon consistent process information.

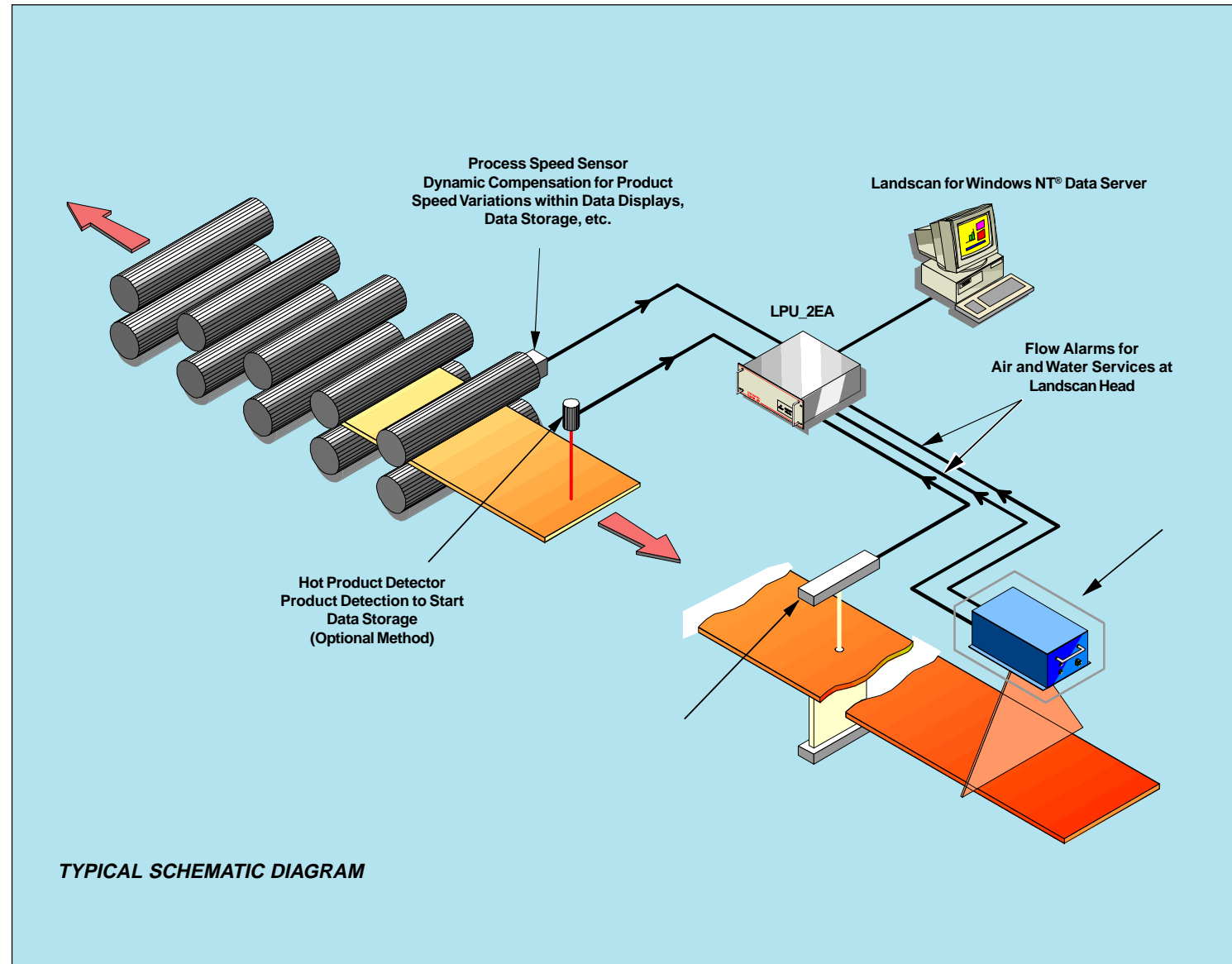
The Landscan for Windows NT system is specifically designed to deliver this critical information through, for example, live, user-configurable operator displays, direct process control system interfaces and product database/statistical summaries for QA purposes.

Landscan literally adds another dimension to the traditional centre-line measurement data provided by on-line radiation thermometers.

BENEFITS AND FEATURES

- Yield enhancements attributable to more consistent product temperature distributions.
- Subtracted map displays give immediate post-processed images of the difference between the latest batch and a reference batch
- Database - trending for QA, statistical summaries, customers' certificates of conformity, etc.
- Direct process control links via LPU_2 Ethernet analog outputs or live ActiveX components, allowing engineers to write their own linked applications for specific purposes (e.g camber evaluation).
- Metallurgical information available directly for the first time from the Cooling Rate Calculation function (ask for Application Bulletin LSAB12 for full details).

**HOT ROLLING MILL . . .
 . . . STRIP, PLATE, BEAMS AND SECTIONS, ROD AND WIRE**



STRIP

The foremost world-wide application for Landscan; with over 90 installations:

- Entry roughing/scale breaker
- Exit roughing/scale breaker
- Coil box
- Entry finishing
- Exit finishing
- Entry downcoiler
- Cold correction of radioisotope thickness gauging

WIRE ROD

Extremely hostile environmental conditions at the laying head require a specially designed water cooled enclosure permitting the Landscan sensor head to be permanently sited.

Narrow angle, high quality optics and ultra-fast response times ensure that Landscan will continually deliver accurate temperature measurements, even on the smallest gauge products.

- Laying head/cooling conveyor entry
- Exit forced cooling/entry drop coiler

PLATE

Landscan for Windows NT® processing system is designed to accommodate and preferentially filter data from reversing stands.

Whole range of statistical summaries can be automatically created and stored.

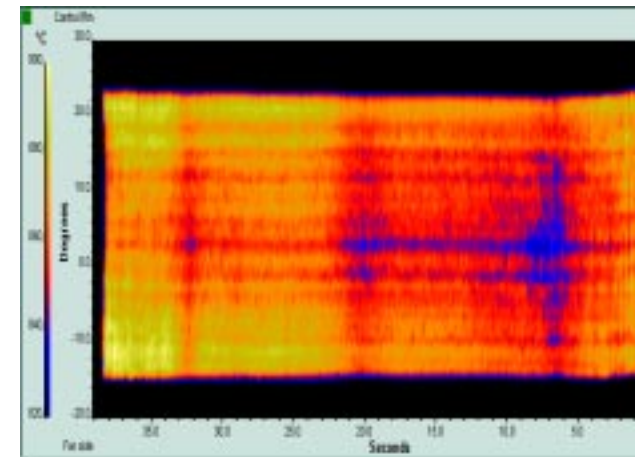
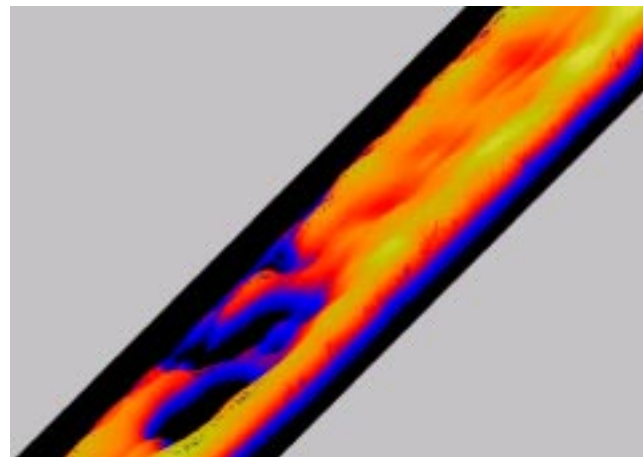
- Exit Roughing
- Exit Finishing
- Cold correction of radioisotope thickness gauging

BEAMS AND SECTIONS

Scanning complex and extended profiles delivers considerable additional information over and above that provided from single on-line radiation thermometers.

- All measurement locations where on-line radiation thermometers have traditionally been used.

Management of product databases on Landscan for Windows NT Data Server is automatic with file naming by Coil/Product ID via RS232 or TCP/IP Ethernet communication from the Process Computer, as required.



Photos: Far left showing a Landscan installation at the hot coil box on a stripmill. Centre showing a 3-D profile. Left showing a ??????.