

LAND

*Thermal Imaging and Temperature Profiles
for Continuous Process Monitoring and Quality Control*

LSP_{HD}

Infrared Linescanners

*with industry leading...
150 Hz scan speed combined with
1000 samples per scan*

An **AMETEK**[®] Company

LSP_{HD}

Features & Benefits

- + High resolution, user focusable optical system allowing detection of small temperature differences across the width of the product, providing optimum product quality through improved process control.
- + Designed for operation in harsh industrial environments – sealed to IP65 (NEMA4), where the ambient temperature is up to 150°C (302°F), ensuring maximum measurement availability and longer instrument life.
- + Plug and play installation via a single Ethernet cable connection, reducing installation time, costs and complexity.
- + Range of data output formats for easy connection to the process control system.

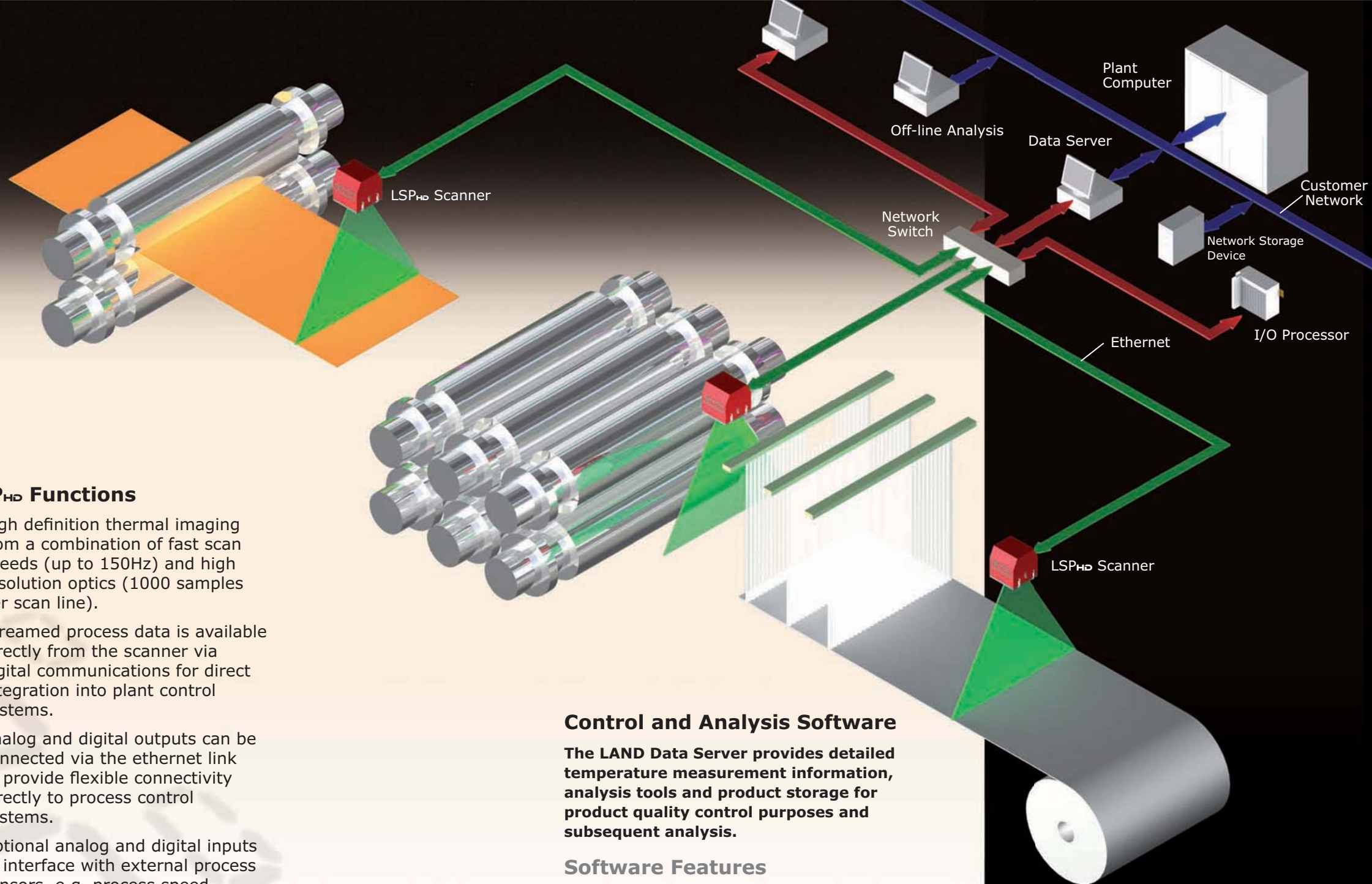


LSP_{HD} Functions

- High definition thermal imaging from a combination of fast scan speeds (up to 150Hz) and high resolution optics (1000 samples per scan line).
- Streamed process data is available directly from the scanner via digital communications for direct integration into plant control systems.
- Analog and digital outputs can be connected via the ethernet link to provide flexible connectivity directly to process control systems.
- Optional analog and digital inputs to interface with external process sensors, e.g. process speed sensors, weld detectors and hot metal detectors



Typical LSP_{HD} installation

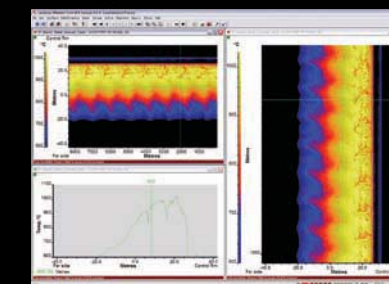


Control and Analysis Software

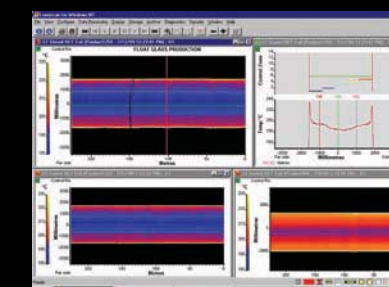
The LAND Data Server provides detailed temperature measurement information, analysis tools and product storage for product quality control purposes and subsequent analysis.

Software Features

- Simultaneous display and processing of multiple live data sources with historical data sources
- Automatic bad product rejection functions
- Flexible interface – provides access to measured temperatures and processed data via a wide range of standard industrial interfaces, e.g. cross-platform TCP/IP protocol, OPC, analog signals or alarm outputs
- Optional support of multiple client workstations – accessing both live and historical data
- Off-line software available to provide access to historical data for quality control purposes



Typical Steel Cast profile



Typical Glass Floatline profile

LSP_{HD} Applications

Industry	Application	Typical Temperature Measurement Range	Recommended Scanner
Cement	Rotary Kilns, Conveyors, Dryers	20 to 250 °C / 68 to 482 °F	LSP _{HD} 60
		50 to 400 °C / 122 to 752 °F	LSP _{HD} 61
		100 to 600 °C / 212 to 1112 °F	LSP _{HD} 62
Conveyors	Cement, Asphalt, Coke	20 to 250 °C / 68 to 482 °F	LSP _{HD} 60
		50 to 400 °C / 122 to 752 °F	LSP _{HD} 61
		100 to 600 °C / 212 to 1112 °F	LSP _{HD} 62
Glass	Floatline, Automotive, Holloware, Bending, Toughening/Tempering, Annealing, Solar Panels	150 to 750 °C / 302 to 1382 °F 500 to 1100 °C / 932 to 2012 °F	LSP _{HD} 5FL & LSP _{HD} 50 LSP _{HD} 52
Iron & Steel	Hot Strip Mill - Roughing Mill Entry/Exit, Coil Box, Edge Heaters, Continuous / Multi-strand caster	600 to 1400 °C / 1112 to 2552 °F 700 to 1500 °C / 1292 to 2732 °F	LSP _{HD} 10 LSP _{HD} 11
	Hot Plate Mill - Roughing Mill Entry/Exit, Hot Leveller		
	Hot Beam Mill - Beam, Beam caster, Jumping beam detection		
	Reheat Furnace Exit, Rod and Wire		
	Hot Strip Mill - Cooling Section Hot Plate Mill - Run-out table Continuous Annealing line (top of snout before zinc pot) Annealing Furnaces Galvanising and Galvanneal lines	200 to 850 °C / 392 to 1562 °F 300 to 1000 °C / 572 to 1832 °F 400 to 1200 °C / 752 to 2190 °F	LSP _{HD} 20 LSP _{HD} 21 LSP _{HD} 22
	Torpedo cars, Ladle safety, Coated steel Galvanising lines (<i>top roll position</i>)	20 to 250 °C / 68 to 482 °F 50 to 400 °C / 122 to 752 °F 100 to 600 °C / 212 to 1112 °F	LSP _{HD} 60 LSP _{HD} 61 LSP _{HD} 62
Paint Coating Lines	50 to 350 °C / 122 to 662 °F	LSP _{HD} 71	
Non-wovens	Non-wovens (Paper rolls, webs)	20 to 600 °C / 68 to 1112 °F	LSP _{HD} 60, 61 & 62
	Polymer-based	50 to 350 °C / 122 to 662 °F	LSP _{HD} 71
Plastics	PVC, Polycarbonates, Polypropylene, Polyethylene, PET, Cellulose acetate and Polystyrene, Thin Plastics, Thermoforming	50 to 350 °C / 122 to 662 °F	LSP _{HD} 71
	Plastic Extruders, Thermoforming	20 to 250 °C / 68 to 482 °F	LSP _{HD} 60
		50 to 400 °C / 122 to 752 °F 100 to 600 °C / 212 to 1112 °F	LSP _{HD} 61 LSP _{HD} 62
Other Industries	Cold Rolling, Coating Processes, Building Products	20 to 600 °C / 68 to 1112 °F	LSP _{HD} 60, 61 & 62

Intelligent Scanning

Intelligent scanning solutions aim to solve problems by providing more than just a measurement. LAND is able to provide a custom solution according to your requirements – this includes custom temperature ranges, application specific mountings and bespoke communications protocols.



Non-Contact Temperature Measurement Solutions

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