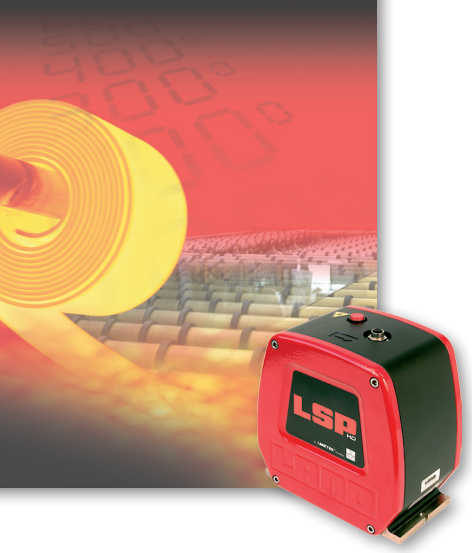


LAND

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

LSP$_{HD}$ 10
600 to 1400 °C /1112 to 2552 °F

LSP$_{HD}$ 11
700 to 1500 °C / 1292 to 2732 °F

Compact, high performance linescanners which provide high definition thermal imaging from a combination of fast scan speeds and high resolution optics. The real-time processed data is provided via an industrial ethernet connection which is plug and play, installed by means of a single cable connection, which reduces installation time and costs.

+industry leading 150 Hz scan speed
1000 samples at all scan frequencies+

Steel Applications - Key Benefits

+ **Process Investigation**
  Displays can be used to identify and analyse problems.
+ **Process Development**
  Process modelling to improve process control
+ **Quality Control**
  Accurate thermal records are a critical aspect of product quality information
+ **Process Control**
  Provide real time displays of the product's thermal images in a variety of different display formats.

Key Applications - Steel

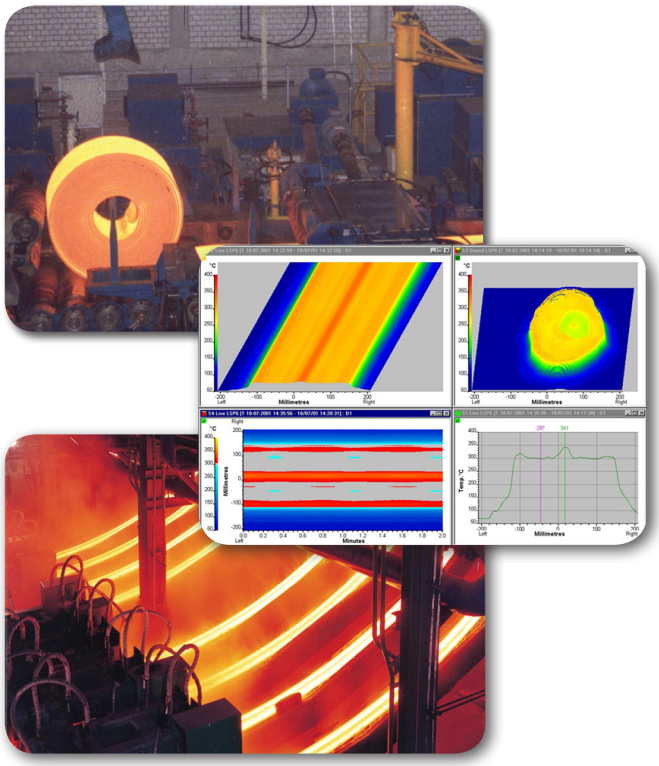
+ Continuous Caster
+ Reheat Furnace - Exit
+ Hot Strip Mill -

  Roughing Mill Entry/Exit, Coil Box, Edge Heaters
+ Hot Plate Mill -

  Roughing Mill Entry/Exit

LSP$_{HD}$ - Key Features

+ High resolution, optical system
+ Designed for operation in harsh industrial environments
+ Plug and play installation via a single Ethernet cable connection
+ Range of data output formats



Photos (Top to bottom): Hot Strip Coiler, Thermal map - Hot Strip Mill, Continuous Caster

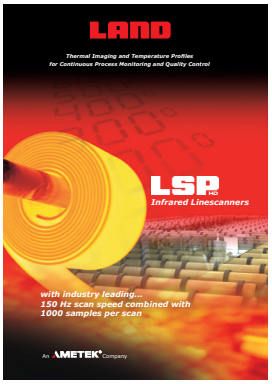
Performance Specifications LSP$_{HD}$ 10 (P/No. 804817) / LSP$_{HD}$ 11 (P/No. 804818)		
Temperature Range:	**LSP$_{HD}$ 10** 600 to 1400 °C / 1112 to 2552 °F	**LSP$_{HD}$ 11** 700 to 1500 °C / 1292 to 2732 °F
Wavelength:	1 µm	
Measurement Accuracy [(1)]:	±2°C / 3.6°F	
Repeatability:	<0.5°C / <0.9°F	
Temp. Resolution typical:	<1°C / <1.8°F	
Drift with ambient temp:	≤ 1° indicated / 10° ambient	
Emissivity:	0.20 to 1.00	
Speed of Response:	≤ 1 µs	
Scan angle:	80° (software adjustable to 40° in 1° steps)	
Scan Speed:	10 to 150 Hz (User adjustable in 10 Hz steps)	
Samples/scan:	1000	
Field of View:	500:1 with user focusable optics (smallest spot size Ø 2mm/0.08 in) *static to 95% radiance*	
	1118:1 with user focusable optics (smallest spot size Ø 2mm/0.08 in) *static to 50% radiance*	
Focus Distance:	1m / 39.7 in to infinity (continuously adjustable by the user)	
Connection (signal/power):	Industrial Ethernet via M12 Connector / Power over Ethernet	
Signal Processing:	Up to 14 user configurable zones with min. / max. / average / quantile / average threshold	
Inputs/Outputs:	PoE (IEEE 802.3at) enabled TCP/IP Industrial Ethernet	
Ambient Temperature	5 to 60°C / 41 to 140°F (specified) 5 to 70°C / 41 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 Laser:	Class 2, maximum output 1.0 mW at 635 nm, IEC60825-1:2001 / Indicating scan plane & extent	
Environmental Sealing:	IP65	
EMC:	EN 61326 Class A; Low Voltage Directive EN61010-1	

Notes: (1) Applies 5 to 95% of range

LSP$_{HD}$ Overview

A complete overview of the entire product range, including the key features and benefits of all models.

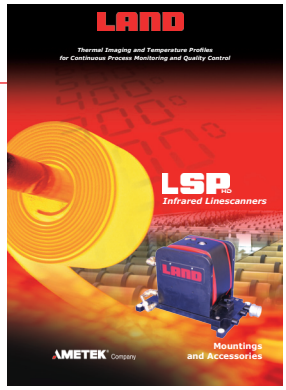
Ref **LSP$_{HD}$** Overview 0210



LSP$_{HD}$ Mountings and Accessories

A complete overview of the entire range of mountings and accessories for the entire **LSP$_{HD}$** product range

Ref. **LSP$_{HD}$** M&A 0210



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Non-Contact Temperature Measurement Solutions

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LASER RADIATION
DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT
1mW MAX OUTPUT AT 635nm
IEC 60825-1:2001

An AMETEK® Company

UKAS CALIBRATION 0034 — Applies in the UK

LLOYD'S REGISTER QUALITY ASSURANCE ISO9001 · UKAS QUALITY MANAGEMENT 001

LABORATORY ACCREDITATION BUREAU ACCREDITED ISO/IEC 17025:2005 — Applies in the USA

REGISTERED ISO 9001 MANAGEMENT SYSTEM

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