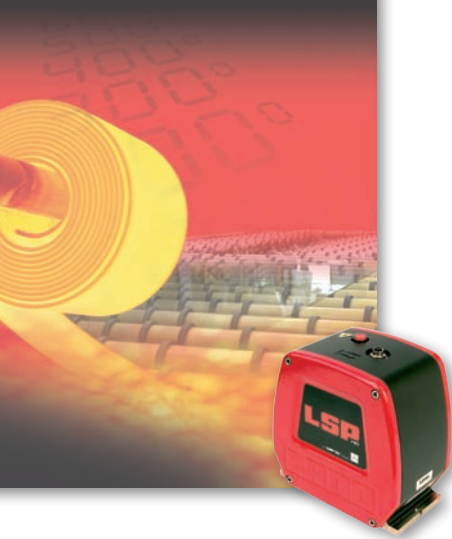


## Thermal Imaging and Temperature Profiles for Continuous Process Monitoring and Quality Control



### LSP<sub>HD</sub> 20

200 to 850 °C / 392 to 1562 °F

### LSP<sub>HD</sub> 21

300 to 1000 °C / 572 to 1832 °F

### LSP<sub>HD</sub> 22

400 to 1200 °C / 752 to 2192 °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.

Photos (Top to bottom): Hot Strip Mill - Cooling Section, Galvanising line

### Key Applications - Steel

- + Continuous Annealing Lines**  
Top of snout before zinc pot
- + Galvanising Lines**
- + Hot Strip Mill - Cooling Section**
- + Hot Plate Mill - Run-out Table**

### LSP<sub>HD</sub> - Key Features

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



**Performance Specifications LSP<sub>HD</sub> 20 (P/No. 804798) / LSP<sub>HD</sub> 21 (P/No. 804799) / LSP<sub>HD</sub> 22 (P/No. 804800)**

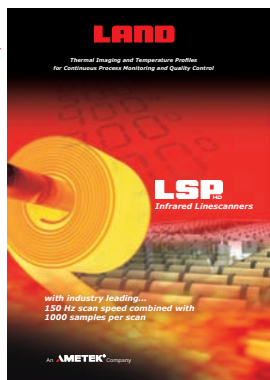
Temperature Range:	<b>LSP<sub>HD</sub> 20</b> 200 to 850 °C / 392 to 1562 °F	<b>LSP<sub>HD</sub> 21</b> 300 to 1000 °C / 572 to 1832 °F	<b>LSP<sub>HD</sub> 22</b> 400 to 1200 °C / 752 to 2732 °F
Wavelength:	2.2 µm	1.9 µm	1.9 µm
Measurement Accuracy(1):	±2°C / 3.6°F		
Repeatability:	<0.5°C / <0.9°F		
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:	≤ 1.5 µs	≤ 1 µs	≤ 1 µs
Scan angle:	80° (software adjustable to 40°)		
Scan Speed:	10 to 150 Hz (User adjustable in 1 Hz steps)		
Samples/scan:	1000		
Field of View:	LSP <sub>HD</sub> 20 - 300:1 with user focusable optics (smallest spot size Ø 2mm/0.08 in) <i>static to 95% radiance</i> LSP <sub>HD</sub> 20 - 1034:1 with user focusable optics (smallest spot size Ø 2mm/0.08 in) <i>static to 50% radiance</i>		
	LSP <sub>HD</sub> 21&22 - 500:1 with user focusable optics (smallest spot size Ø 2mm/0.08 in) <i>static to 95% radiance</i> LSP <sub>HD</sub> 21&22 - 1118:1 with user focusable optics (smallest spot size Ø 2mm/0.08 in) <i>static to 50% radiance</i>		
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 61320:1999 Class A (immunity and emission); IEC 1010 (safety)		

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

## LSP<sub>HD</sub> Overview

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

Ref **LSP<sub>HD</sub> Overview 0310**



## LSP<sub>HD</sub> Mountings and Accessories

A complete overview of the entire range of mountings and accessories for the entire LSP<sub>HD</sub> product range

Ref. **LSP<sub>HD</sub> M&A 0310**



**Non-Contact Temperature Measurement Solutions**

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For full details of all international offices and distributors please visit our websites



0034 Applies in the UK



Applies in the USA

