LAND®
AMETEK®

LSP-HD

Non-contact Infrared Linescanners

A compact infrared linescanner, LSP-HD offers highly accurate temperature measurements by producing advanced thermal images of moving processes and is available in a range of application-specific models.

Offering industry-leading scanning performance of 1000 samples per line at scan speeds as high as 150 scans per second, LSP-HD sets a benchmark for process imaging definition, measuring very small temperature differences for improved process control and consistent product quality.

Windows Control and Analyse (WCA) software enables viewing and analysis of multiple live and historical temperature data streams, offering versatile data processing options adaptable to your application needs. With fully scalable input/output capabilities to meet precise application requirements, the tagging and linking of multiple live data streams enables production process databeses to be created with ease.

LSP-HD is available in a number of models across a wide range of wavelengths, each optimised for a specific range of industrial applications in the glass, industrial processing and steel industries.

LSP-HD operates at an industry leading 150 Hz scan speed, providing 1000 samples per line at all scan frequencies.

FEATURES & BENEFITS

- **High resolution optical system** to allow detection of small temperature differences across the product width, ensuring optimal quality through improved process control.
- **Advanced WCA display and analysis software** can be used alongside LSP-HD, or can be used independently to communicate digitally to other systems.
- **Designed to operate in harsh industrial environments** to ensure longer instrument life and maximise measurement availability.
- **High resolution of 1000 samples per line** offering complete coverage of the measure surface with overlapping pixels.
- **Plug and play installation via Ethernet cable connection** to reduce installation time, costs and complexity.
- **Laser alignment** for precise targeting

See degrees differently.

SPECIFICATIONS

	10, 11, 12	20, 21, 22, 23	5FL, 50, 51, 52	60, 61, 62, 63	71
Measurement Range °C:	**10:** 600 to 1400 °C **11:** 700 to 1500 °C **12:** 800 to 1700°C	**20:** 200 to 850 °C **21:** 300 to 1000 °C **22:** 400 to 1200 °C **23:** 250 to 1000°C	**5FL:** 150 to 750 °C **50:** 150 to 750 °C **51:** 250 to 850°C **52:** 500 to 1100 °C	**60:** 20 to 250 °C **61:** 50 to 400 °C **62:** 100 to 600 °C **63:** 50 to 850°C	50 to 350 °C
Measurement Range °F:	**10:** 1112 to 2552 °F **11:** 1292 to 2732 °F **12:** 1472 to 3092 °F	**20:** 392 to 1562 °F **21:** 572 to 1832 °F **22:** 752 to 2192 °F **23:** 482 to 1832 °F	**5FL:** 302 to 1382 °F **50:** 302 to 1382 °F **51:** 482 to 1562 °F **52:** 932 to 2012 °F	**60:** 68 to 482 °F **61:** 122 to 752 °F **62:** 212 to 1112 °F **63:** 122 to 1562 °F	122 to 662 °F
Wavelength:	1 µm	**20:** 2.2 µm, **21:** 1.9 µm, **22:** 1.9 µm, **23:** 2.2 µm	5 µm nominal	**60:** 3 to 5 µm, **61:** 3 to 5 µm, **62:** 3 to 4.2 µm, **63:** 3 to 5 µm	3.4 µm nominal
Measurement Accuracy:	±2 °C / ±3.6 °F		**5FL, 50 & 51:** ±2 °C / ±3.6 °F **52:** ±3 °C / ±6.4 °F	±2 °C / ±3.6 °F	
Repeatability:	<0.5 °C / <0.9 °F				
Temp. Resolution Typical:	1 °C / 1.8 °F		**5FL, 50 & 51:** 1 °C / 1.8 °F **52:** 2.5 °C / 4.5 °F	**60 & 63:** 2 °C / 3.6 °F **61:** 1 °C / 1.8 °F **62:** 1 °C / 1.8 °F	2 °C / 3.6 °F
Drift with ambient temp:	1° indicated / 10° ambient		**5FL, 50 & 51:** 2° indicated / 10° ambient **52:** 3° indicated / 10° ambient	1° indicated / 10° ambient	
Emissivity:	0.20 to 1.00		0.10 to 1.00	0.20 to 1.00	
Speed of Response:	1 µs	**20:** 1.5 µs, **21:** 1 µs, **22:** 1 µs, **23:** 1.5 µs	5 µs	**60:** 10 µs, **61:** 5 µs, **62:** 5 µs **63:** 10 µs	10 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 2 mm / 0.08 in) static to 95 % radiance 1118:1 with user focusable optics (smallest spot size Ø 2 mm / 0.08 in) static to 50 % radiance	**20 & 23:** 300:1 with user focusable optics (smallest spot size Ø 2 mm / 0.08 in) static to 95 % radiance 1034:1 with user focusable optics (smallest spot size Ø 2 mm / 0.08 in) static to 50 % radiance **21 & 22:** 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	12 mm / 0.5 in for target distance less than 1200 mm / 47.2 in 100:1 for target distance greater than 1200 mm / 47.2 in static to 95 % radiance 300:1 for target distance greater than 1200 mm / 47.2 in static to 50 % radiance	12 mm / 0.5 in for target distance less than 1200 mm / 47.2 in 100:1 for target distance greater than 1200 mm / 47.2 in static to 95% radiance 300:1 for target distance greater than 1200 mm / 47.2 in static to 50 % radiance	12 mm / 0.5 in for target distance less than 1200 mm / 47.2 in 100:1 for target distance greater than 1200mm / 47.2 in static to 95 % radiance 300:1 for target distance greater than 1200mm / 47.2 in static to 50 % radiance
Focus Distance:	1m / 39.7 in to infinity (continuously adjustable by the user)	1m / 39.7 in to infinity (continuously adjustable by the user)	Fixed Focus at 1200 mm / 47.2 in		
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 Temp:	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 in				
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				

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We are fully committed to Quality Assurance. See all our accreditations at **AMETEK-LAND.COM/QUALITY**

MARCOMS_DOC-00253 LSP-HD Rev 1 EN