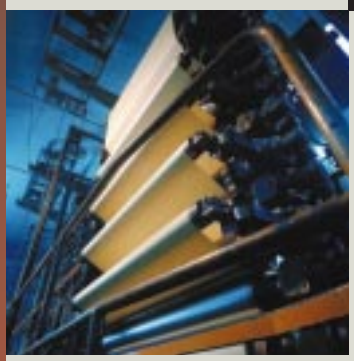
Temperature measurement
from - 50° C up to + 3000° C

Up to 90° Scan angle
Example: 5 m scan length
at 2.5 m distance

Application
specific solutions

Dual mode - stand alone
and remote control

WE KEEP YOUR TEMPERATURE UNDER CONTROL



Temperature monitoring in paper finishing

Precise thermal control in glass production

Accurate temperature monitoring in environmental applications

Line-Scanner

LS12

Precise Temperature Distribution Measurement

HEITRONICS
Infrarot Messtechnik

The versatile Line-Scanner for temperature measurement from -50° C to +3000° C

The Line-Scanner

Ideal for temperature measurement of moving targets. Applications range from frozen food or plastic foil to sheet rock or glass materials.

Adaptable: Various combinations of scanner and radiation pyrometer allow us to offer unique solutions for every customer application. This custom solution is specific to each application.

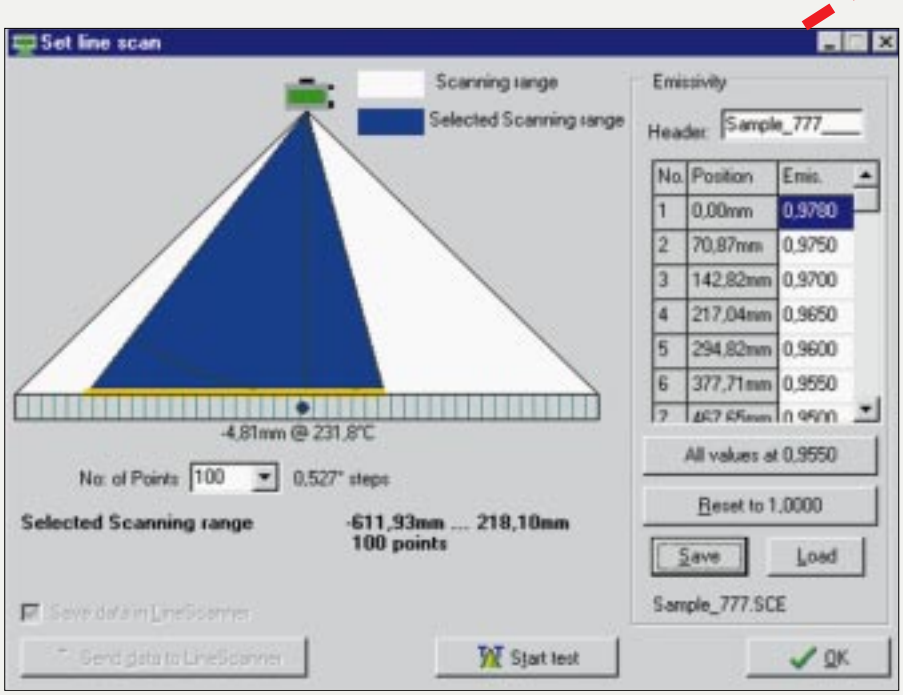
Service: All materials will be tested in our application laboratory. We will find a solution which fits each customer's requirements.

Compact: The Line-Scanner integrates into production without problems. The metal housing is rugged and fulfills all relevant CE requirements.

Flexible: The Line-Scanner operates in two modes.
- **Stand alone** - using a downloaded configuration, the system runs on its own.
- **Remote control** in combination with a PC; control and signal processing are performed online via interface.

The Line-Scanner measures temperature along a line. Up to 250 measuring points can be processed on the chosen measuring length. ▶

Our ScanPerfect software is Windows based (Windows 95/98/NT4.0), with the PC and line scanner connected via serial interface. The scan length (scan angle), the scanning speed and the number of measuring points are all programmable. The software displays and stores the data. The true target temperature is displayed thanks to the table of emissivity versus measuring position utilized by ScanPerfect.

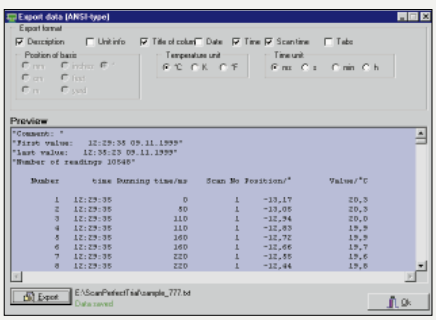


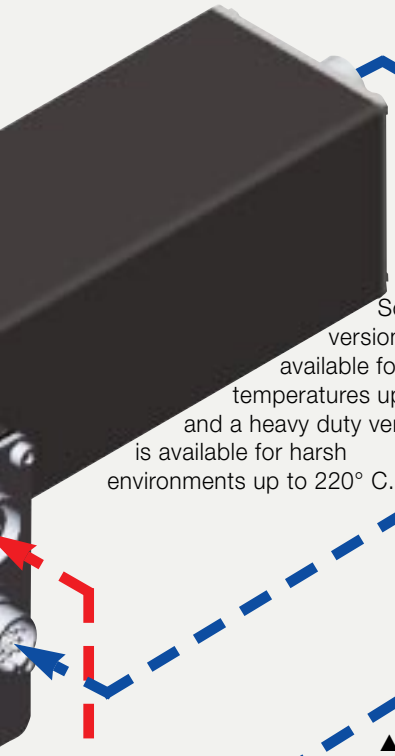
The ScanPerfect Software

Versatile: the ScanPerfect software architecture allows for optional modification of the algorithm and hardware outputs.

Secure, thanks to online watchdog monitoring: ScanPerfect reports errors and disruptions.

The measurement data may be exported as an ASCII-file. ▼



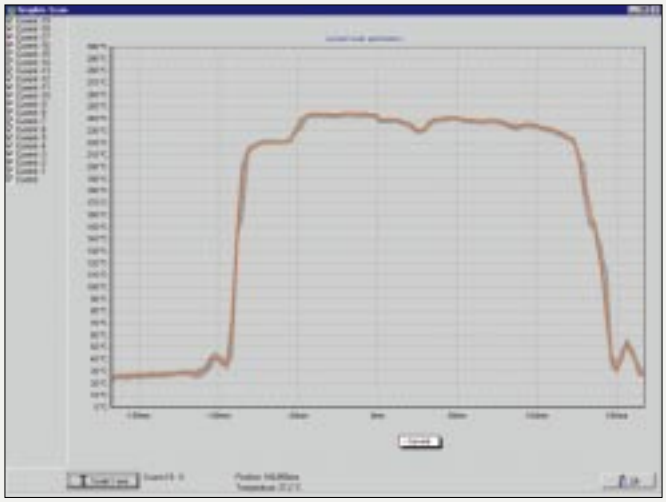


◀ The Radiation Pyrometer KT15D is part of the Line-Scanner which is available in two versions. The standard version is available for environmental temperatures up to 60° C and a heavy duty version is available for harsh environments up to 220° C.

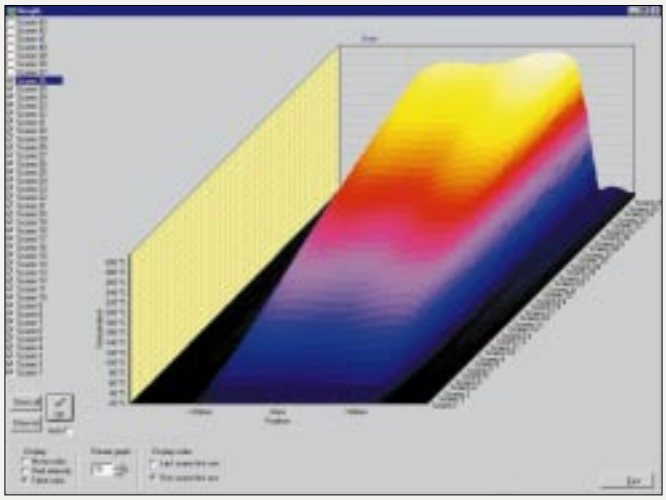
▲ *The measurement result will be individually processed and displayed depending on the programmed options. Signal processing and signal compression are optionally available.*

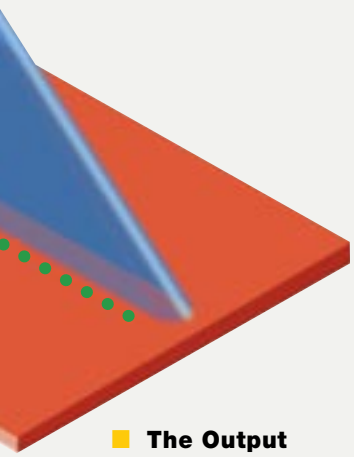
◀ *The Line-Scanner can be programmed via PC and the measuring data can be stored as an ASCII file.*

▶ *The results will be continuously displayed in real time.*



The false color display shows an overview of the temperature distribution. ▼





The Output

Graphics: In **remote control** mode the PC handles the control and data storage. The measuring values are displayed in the form of line diagram, 3-D graphics or other display modes.

Variable: In **stand alone** mode two signals are provided for position and temperature values. Processing of these signals is performed by the end user.

Analog: In both remote and stand-alone modes the Line Scanner provides the analog output of the temperature values.

Many applications

The modular construction of the Line-Scanner enables the system to run itself in a variety of applications.
For example:

▶ *Use in process control.*

▶ *Precise temperature measurement in food production.*

◀ *Reliable temperature control in metal processing…*

▶ *Accurate point measurement in painting applications.*

◀ *… and in plastic foil production.*

Line-Scanner LS12-Series

Selction Guide

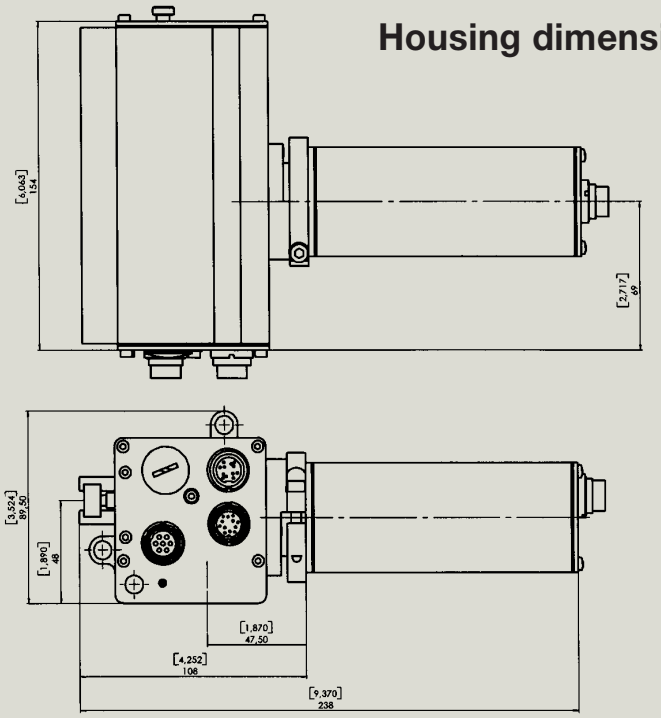
Model	Spectral Response µm	T_{min} ...T_{max} ° C	Application/Material
LS12.01	2.00 ... 2.70	300... 2400	metals, metal oxides, ceramics, glass volume
LS12.21	3.43 ± 0.15	80... 350	plastic film with CH-band, coating materials (oil, paints)
LS12.23	6.80 ± 0.15	0... 400	thin film plastics, e.g. PE, PP, PVC
LS12.24	7.93 ± 0.15	0... 400	thin film plastics, e.g. PET, PA, fluor carbon
LS12.25	8.05 ± 0.15	0... 400	thin film plastics, e.g. PTFE, PET, PVC
LS12.41	3.90 ± 0.10	250... 2500	glass volume, measurements through hot gases and flames
LS12.42	4.90 ... 5.50	100... 2500	glass (processing), quartz
LS12.43	7.50 ... 8.20	0... 2500	glass (thin plates), quartz, ceramics
LS12.69	x ... y	400... 2500	hot gases in incinerators and fossil fuel fired utility boilers, rotary kiln
LS12.82	8 ... 14	-50... 1000	paper, textiles, rubber, wood, ceramics, thicker plastics (>1mm), painted or coated surfaces, asphalt, building materials, electronic components, food, liquids
LS12.85	9.6 ... 11.5	-25... 200	meteorological, biological, agricultural studies
LS12.99	*other spectral and temperatures ranges are available*		

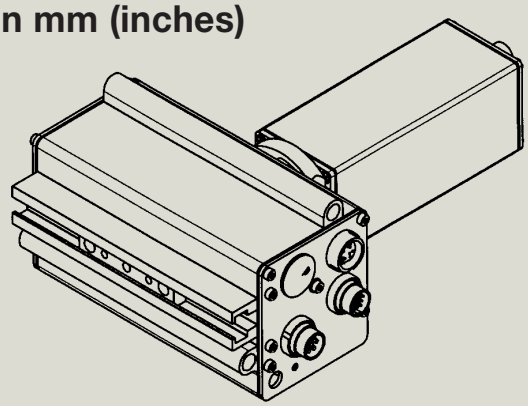
General Specifications

Temperature range	Depends on model, minimum and maximum measuring temperature, see table above
Temperature resolution (NETD)*	Depends on model, measuring temperature and response time; typical value ± 0.2° C
Accuracy	± 0.9° C ± 0.9% of the difference between target temperature and housing temperature
Long-term stability	Better than 0.01% of the absolute measured temperature in Kelvin/month
Scanning angle	90° maximum scanning angle is freely programmable
Angle resolution	0.057°
Scanning speed	up to 90°/s
Measuring points	250 measuring points per programmed angle range
Aiming options*	Several optical and mechanical options are available, e.g. laser pointer
Emissivity setting	Adjustable from 0.1 to 1.0, programmable in 0.001 increments. Individual programmable for every measuring point
Analog output	4 scalable output signals; linear voltage or current 0...1 V or 0...10 V or 0...20 mA or 4...20 mA (programmable)
Serial interface	RS-232 interface, bi-directional, baud rate 9,600 up to 57,600, for free programming and data transfer
Power requirements	22...30 VDC or 24 VAC ± 10%, 48...400 Hz; # 250 mA with 24 VDC
Permissible ambient temperature	0° C up to 60° C with protective and coolable housing 220° C (water cooling with 20° C and water pressure 1 l/min with max. 6 bar)
Storage temperature	- 20° C ... 70° C
Air purge	Airflow rate 3...5 m^3/h at 0.3...0.5 bar (industrial air)
Housing protection, weight	IP 65 (DIN 4005) NEMA 4 equivalent, approx. 2 kg

**) Please ask for further data of Infrared Radiation Pyrometer KT15D-Series (temperature ranges, temperature resolution, field of view): "Technical Data", "Field of View Diagrams", "Options and Accessories".*

Housing dimensions in mm (inches)





HEITRONICS Infrarot Messtechnik GmbH • Kreuzberger Ring 40 • D-65205 Wiesbaden • Tel. ++49 (0)611 973 930
Fax ++49 (0)611 973 93 26 • e-Mail HEITRONICS@T-Online.de • http://www.heitronics.com

HEITRONICS Infrarot Messtechnik

05.2000/030/e/D&F/ Wiehr- Design