

MikroLine 2128



High Speed IR-line Camera for Fast Non-Contact Temperature Measurement of Production Processes

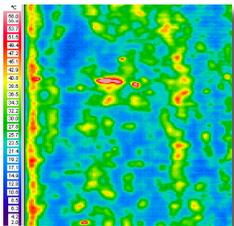
Unique high speed IR-Line camera with 128 data points per line and a measuring rate of 512 lines per second



Features:

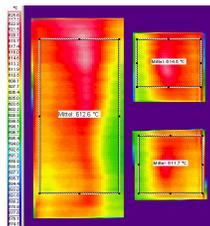
- Industrial housing IP65
- Air purge for lens
- Water-cooling
- Operation with or without PC
- Fiber-optic data transmission
- No opto-mechanical scanner
- 128 data points/line at 512 lines/second
- Uncooled infrared linear array
- 16 bit A/D conversion
- Large dynamic range
- Triggered measurement
- Alarm function
- Data recording
- Application specific hardware and software

M2128 and M2128S
for applications at 8 to 14 μm



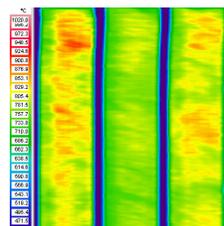
Hot-spot recognition in mineral wool production

M2128 G and M2128 GS
for applications at 4.8 to 5.2 μm



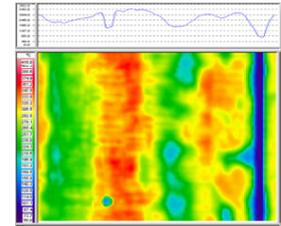
Images of glass panes after annealing process

M2128 H
for applications at 1.4 to 1.8 μm



Temperature control in the steel industry

M2128 M and M2128 MS
for applications at 3 to 5 μm



Jacket of a rotating kiln: color representation and line profile

High speed IR-line camera with 128 data points per line and a measuring rate of 512 lines per second — an industrial infrared camera for fast non-contact temperature measurement of production processes. Triggered inputs and alarm outputs allow the camera to be used as a threshold control alarm, even without being connected to a computer. An efficient online software running with Windows™ ensures the control of thresholds and processes. By recording data functions, quick temperature changes can be saved as a video.

Mikron has been an innovative leader in the field of infrared non-contact temperature measurement since 1969. Our staff of qualified engineers and trained sales consultants are completely dedicated to quality and to helping customers solve their most challenging application problems.

Introducing Mikron's THERMALSPECTION™

Implementing a systems approach for thermal process applications requires full knowledge of the customer's applications, available thermal imagers and thermal scanners, customer's existing controls platform, and software requirements, etc. We have a full staff of engineering and software specialists available for the design and development of comprehensive turn-key systems for all customer applications. Experience in many different thermal applications is the backbone of our designs and short-term turnaround for specialized software and custom camera configurations is our specialty.



THE INFRARED PROS

Technical Data

SELECTION CHART 1

Model	MikroLine M2128	MikroLine M2128S	MikroLine M2128 G	MikroLine M2128 GS
Spectral range	8 to 14 μm	8 to 14 μm	4.8 to 5.2 μm	4.8 to 5.2 μm
Measurement range ¹	50 to 550°C or 450 to 1250°C	0 to 80°C or 50 to 350°C	450 to 1250°C	250 to 1250°C
Optics Focal Length Field of View Measurement Distance Spatial resolution	18mm 40° x 0.3° 10 cm to infinity 6 mrad (50% modulation)	18mm 40° x 0.3° 10 cm to infinity 6 mrad (50% modulation)	13mm 60° x 0.5° 20 cm to infinity 9 mrad (50% modulation)	13mm 60° x 0.5° 20 cm to infinity 9 mrad (50% modulation)
Measurement uncertainty ²	2K (measured temperature < 100°C) or 1K + 1% of the measured value in °C	2K (measured temperature < 100°C) or 1K + 1% of the measured value in °C	1K + 1% of the measured value in °C	1K + 1% of the measured value in °C
Noise equivalent temperature difference ²	<0.5 K	<0.2 K	<1 K	<1 K

SELECTION CHART 2

Model	MikroLine M2128 H	MikroLine M2128 M	MikroLine M2128 MS
Spectral range	1.4 to 1.8 μm	3 to 5 μm	3 to 5 μm
Measurement range ¹	600 to 1300°C	450 to 1250°C	200 to 800°C
Optics Focal Length Field of View Measurement Distance Spatial resolution	12mm 60° x 0.5° 50 cm to infinity 9 mrad (50% modulation)	13mm 60° x 0.5° 20 cm to infinity 9 mrad (50% modulation)	13mm 60° x 0.5° 20 cm to infinity 9 mrad (50% modulation)
Measurement uncertainty ²	1K + 1% of the measured value in °C	1K + 1% of the measured value in °C	1K + 1% of the measured value in °C
Noise equivalent temperature difference ²	<1 K	<0.5 K	<0.5 K

GENERAL SPECIFICATIONS

Sensor	Uncooled pyroelectric linear array
Frame rate	Internal 512 Hz, selectable: 512 Hz, 256 Hz, 128 Hz, 64 Hz, 32 Hz ...
Response time	Internal 16 ms, selectable: 2/measurement frequency
Interface ³	RS232 wire (4 Hz max); RS422 wire (32 Hz max); RS232 fiber optic (32 Hz max); PCMCIA fiber optic (128 Hz max)
Digital inputs (trigger)	LED input (5V \leq V _E \leq 25V)
Digital outputs (alarm)	Optically coupled OC-outputs (1 _C \leq 50mA, V _E \leq 25V); 4 I/O channels max
Connectors ³	Round connector with thread interlocking (16 pins); Interlocking fiber optic connector (2 fibers); Water supply tubing (nominal width 4mm, 2 bar max); Compressed air tubing (nominal width 4mm, 2 bar max)
Weight	ca. 3.2 kg
Power Supply	11...36 V DC/10...20 VA
Housing	Protection degree IP65, optional with integrated water-cooling system, air purge, swivel base
Operating temperature Camera System cable Fiber optic	0 to 50° (without water-cooling); -25° to 150°C (with water-cooling) -25 to 150°C 0 to 70°C
Storage conditions	-20 to 70°C, relative humidity: max. 95%
Software	PC control and display program IR_LINE for Windows™

¹ Other on request ² Specification for 32 Hz measurement frequency, blackbody reference, ambient temperature 25°C ³ Dependent upon configuration

Mikron reserves the right to change specifications to reflect the latest changes in technology and improvements at any time without notice. These changes will be reflected in subsequent editions of our literature when warranted.

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MikroLine 2128 Rev 032905

