Infrared Line Cameras PYROLINE

High-Speed Non-Contact Measurement Of Temperature Profiles

0 °C to 3000 °C
The infrared line cameras PYROLINE allow you high-speed non-contact measurement of temperature profiles.

The cameras are specially designed for long-term use in fixed-mounted applications. For general purpose use the spectral ranges from 8 μm to 14 μm and 3 μm to 5 μm are available. The spectral ranges from 4.8 μm to 5.2 μm (which is particularly suitable for the measurement of temperature profiles in glass) and 0.8 μm to 1.1 μm (for metal) are for special applications.

With an uncooled infrared linear array (128, 256 or 512 pixels) you can realize non-contact measurement with 256 lines per second (512 lines per second optional) in temperature ranges from 0 °C to 3000 °C. The high-speed version PYROLINE HS 512N even provides 2000 lines per second. The camera has an aluminium compact-housing (IP54) or in a stainless steel industry protection housing IP65. More housing variants are available.

Different lenses with a field of view up to 90° are available. Measurement results can be transferred to your computer with real-time data transmission via fast ethernet with up to 2000 lines per second. Stand-alone operation without computer is possible too. Alarm and thresholding monitoring as well as triggered measurements are practicable.

Selected technical features

| Measurement uncertainty | 2 K (object temperature < 100 °C) or 1 K + 1 % of measured value in °C |
| Interfaces              | Fast Ethernet, galvanically isolated digital inputs (trigger) and digital outputs (alarm) |
| Power supply            | 12 V to 36 V DC, approx. 7 VA |
| Camera housings         | • Standard compact housing IP54 "compact": aluminium, 85 mm (L) × 175 mm (W) × 107 mm (H), without optics and connections, weight approx. 1.6 kg |
|                         | • Standard compact housing IP54 "compact+": aluminium, 65 mm (L) × 160 mm (W) × 79 mm (H), without optics and connections, weight approx. 1.1 kg |
|                         | • Industry protection housing IP65 "protection": stainless steel, with air purge unit, water cooling and protection window, diameter 110 mm, length 280 mm, without mechanical mounting and connections, weight approx. 4.2 kg |
|                         | • Explosion proof and weather proof housing |

Operating temperature of the camera

-10 °C to 50 °C (without water-cooling),
-25 °C to 150 °C (with water-cooling)

Advantages of line cameras compared to line scanners:

- no opto mechanical Scanner
- high measurement speed up to 2000 lines/second
- use of uncooled infrared sensor arrays
- simultaneous measurement of all measurement points

We grant you 2 years warranty and customized system solutions with modified hardware and software.
PYROLINE
High-Speed Uncooled Infrared Line Camera For Non-Contact Measurement Of Temperature Profiles

**Camera type** | **Pixel** | **Temperature range** | **NETD** | **Spectral range**  
--- | --- | --- | --- | ---  
128LS/256 Hz | 128 x 1 | 0 °C to 80 °C | 0.2 K/0.5 K | 8 µm to 14 µm  
128L/256 Hz | 128 x 1 | 50 °C to 550 °C | 0.5 K/1.5 K |  
256L/256 Hz | 256 x 1 | 50 °C to 550 °C | 0.5 K/1.5 K |  
128LS/512 Hz | 128 x 1 | 50 °C to 550 °C | 0.5 K/2 K |  
256L/512 Hz | 256 x 1 | 150 °C to 800 °C | 0.5 K/2 K |  
Optics with motor focus: 40°, 60°, 90°

**Camera type** | **Pixel** | **Temperature range** | **NETD** | **Spectral range**  
--- | --- | --- | --- | ---  
128G/256 Hz | 128 x 1 | 450 °C to 1250 °C | 1 K/3 K | 4.8 µm to 5.2 µm  
256G/256 Hz | 256 x 1 | 450 °C to 1250 °C | 1 K/3 K |  
128GS/256 Hz | 128 x 1 | 250 °C to 800 °C | 1 K/3 K |  
Optics with motor focus: 40°, 60°, 90°

**Camera type** | **Pixel** | **Temperature range** | **NETD** | **Spectral range**  
--- | --- | --- | --- | ---  
128M/256 Hz | 128 x 1 | 450 °C to 1250 °C | 0.5 K/1.5 K | 3 µm to 5 µm  
256M/256 Hz | 256 x 1 | 450 °C to 1250 °C | 0.5 K/1.5 K |  
128MS/256 Hz | 128 x 1 | 200 °C to 800 °C | 0.5 K/1.5 K |  
Optics with motor focus: 40°, 60°, 90°

**Camera type** | **Pixel** | **Temperature range** | **NETD** | **Spectral range**  
--- | --- | --- | --- | ---  
512N/256 Hz | 512 x 1 | 600 °C to 1500 °C, 1400 °C to 3000 °C | 1 K | 0.8 µm to 1.1 µm  
HS 512N/2 kHz | 512 x 1 | 650°C to 1500°C, 1400 °C to 3000 °C | 1 K |  
Optics with motor focus: 9°, 13°, 19°, 36°, 51°, 90°  
19° × 0.2° | 1 | 352 | 3 |  
3 | 1060 | 8 |  
10 | 3530 | 28 |  
40° × 0.3° | 1 | 728 | 6 |  
3 | 2180 | 17 |  
10 | 7280 | 57 |  
51° × 0.2° | 1 | 960 | 3,8 |  
3 | 2880 | 11,3 |  
10 | 9600 | 37,5 |  
60° × 0.5° | 1 | 1160 | 9 |  
3 | 3460 | 27 |  
10 | 11500 | 90 |  
90° × 0.9° | 1 | 2000 | 16 |  
3 | 6000 | 47 |  
10 | 20000 | 156 |  

1) Others on request. 2) Specifications for black body radiator and ambient temperature 25 °C. 3) Noise equivalent temperature difference at 32 Hz and maximum measurement frequency.

M ... Measurement Distance  
H ... Field of View Height  
W ... Field of View Width

[Image of the camera and optical systems]
PYROLINE

Dimensional drawing standard compact housing „compact“ (IP54)

Dimensional drawing industrial "protection" housing (IP65)

Dimensional drawing standard compact housing „compact+“ (IP54)

Connectors

Ethernet (LAN)
- Infrared data in real-time with up to 2000 lines per second (TCP/UDP)
- Web interface (status and image bar)
- PYROSOFT software
- Configuration for stand-alone operation

Inputs
- Power supply
- Trigger 1
- Trigger 2

Outputs
- Error signal/
- Alarm 1
- Synch signal/
- Alarm 2

Customized terminal box
(with power supply, alarm relay, controller, media converter, ...)

Software
The powerful online software PYROSOFT for Windows® allows you to control the infrared line camera PYROLINE. Recording, viewing, manipulation and storage of the measured data are possible as well.

Special features are:
- real-time data recording
- definition of zones and monitoring of alarm thresholds
- analysis of trends
- data export (text, bitmap, video)
- process control via PROFIBUS, analog and digital inputs, outputs and other interfaces

A programming interface (Windows® DLL) is available for system integration.

Technische Änderungen vorbehalten. Technical details are subject to change.

Technisches Zeichnungsmaterial. Technical drawings are subject to change.

DIAS Infrared GmbH
Pforzheimer Straße 21
01189 Dresden
Germany

Phone: +49 351 896 74-0
Fax: +49 351 896 74-99
Email: info@dias-infrared.de
Internet: www.dias-infrared.com

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