

Application Information

PYROLINE and PYROVIEW infrared cameras for the glass industry



The **PYROLINE** and **PYROVIEW** infrared cameras offer you the capability to carry out non-contact measurements of thermal distributions with high thermal and spatial resolution.

The cameras have a number of temperature measurement ranges between 200 °C and 1250 °C over the spectral range of 4.8 μm to 5.2 μm , and are ideally suited for use during the manufacture of glass.

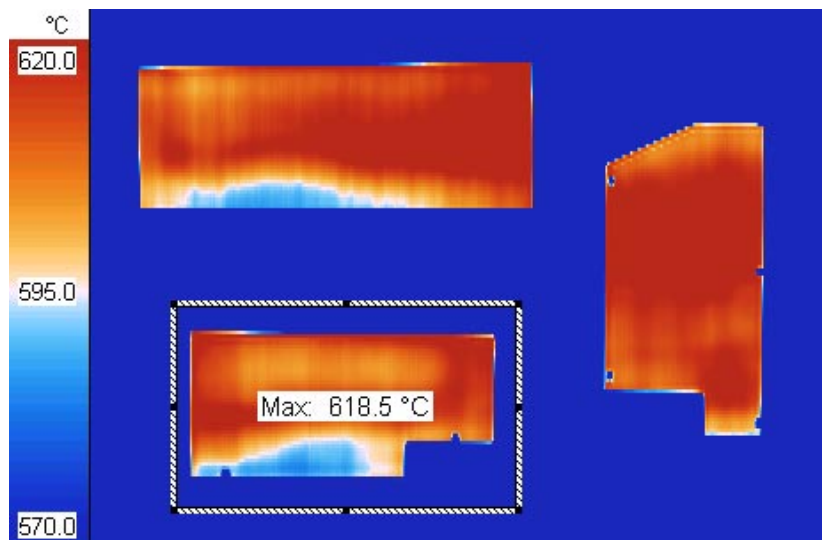
The robust housing (protection to IP 65 Standard), which is available with water cooling and air purging, ensures the reliable operation of the cameras in harsh industrial environments.

A simple linkage to existing process control systems is possible using high-speed data transfer by Ethernet interface or fibre optic cable, and by the optional Profibus interface. Digital input and output signals enable measurements to be triggered, and the transmission of alarm signals when threshold values have been exceeded.

The **PYROLINE** line cameras are particularly suited for making thermographic measurements when the target is in continuous motion.

Linear scanning, which has a maximum line frequency of 512 Hz, can be triggered to cover defined speed ranges. A thermal picture is produced by combining the series of linear images.

Examples of the successful use of infrared line cameras are process temperature monitoring during the manufacture of flat glass, during glass



hardening and forming, and during the application of adhesives to combine glass laminates. Cracks, lumps, thin areas and bubbles are clearly identified by temperature changes during cooling and heating.

The high resolution imaging infrared cameras of the **PYROVIEW** range are used for stationary objects or those in discontinuous motion. An example is the monitoring of temperature distributions during the manufacture of glass containers.

In addition, the specialised **PYROINC** cameras, with optional cooled probe objectives, are available for measuring temperature distributions in crucibles.

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Infrared Line Cameras PYROLINE 128G and PYROLINE 128GS

Sensor	uncooled pyroelectric linear array (128 pixels)
Spectral Range	4.8 μm to 5.2 μm
Temperature Measurement Range	450 °C to 1250 °C (PYROLINE 128G), 250 °C to 800 °C (PYROLINE 128GS)
Noise Equivalent Temperature Difference²	< 1 K (32 Hz), < 3 K (256 Hz)
Measurement Frequency	internal 256 Hz (optional 512 Hz), selectable: (512 Hz), 256 Hz, 128 Hz, 64 Hz, ...
Lens¹	60° × 0.5° (measurement distance > 20 cm), optional 40° × 0.3° (measurement distance > 10 cm)

Infrared Line Camera PYROLINE 256G

Sensor	uncooled pyroelectric linear array (256 pixels)
Spectral Range	4.8 μm to 5.2 μm
Temperature Measurement Range¹	450 °C to 1250 °C
Noise Equivalent Temperature Difference²	< 1 K (32 Hz), < 3 K (256 Hz)
Measurement Frequency	internal 256 Hz (optional 512 Hz), selectable: (512 Hz), 256 Hz, 128 Hz, 64 Hz, ...
Lens	60° × 0.5° (measurement distance > 20 cm), optional 40° × 0.3° (measurement distance > 10 cm)

Infrared Camera PYROVIEW 380G

Sensor	uncooled microbolometer array (384 × 288 pixels)
Spectral Range	4.8 μm to 5.2 μm
Temperature Measurement Range¹	200 °C to 500 °C, 400 °C to 1250 °C
Noise Equivalent Temperature Difference²	< 1 K (300 °C, 50 Hz)
Measurement Frequency	internal 50 Hz, selectable: 50 Hz, 25 Hz, 12.5 Hz, ...
Lens¹	30° × 23° (measurement distance > 50 cm), optional 15° × 12° (measurement distance > 100 cm)

Online Software PYROSOFT for Windows®

Camera control and monitoring
Data acquisition, real-time data storage, visualisation, editing and storage of measured data
Zone calculation and alarm limit value monitoring, trend analysis and data export (text, bitmap, video)
Process coupling via Profibus or analog and digital inputs and outputs
Software interface (Windows®-DLL) for system integration

¹ Others available. ² Specification for black body reference and ambient temperature 25 °C. April 2008. Subject to technical change.

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