thermoIMAGER TIM // Compact thermal imaging cameras
Thermal imaging camera with line scan for the glass industry

thermoIMAGER TIM G7

- Line scan feature via license-free TIMConnect analysis software
- Frame rate up to 125 Hz
- Robust against ambient temperatures up to 70 °C without requiring additional cooling, up to 315 °C with Cooling Jacket Advanced
- Optional integration of a reference pyrometer for glass with a reflection coating
- Compact design (46 mm x 56 mm x 68 - 100 mm) with USB interface
- Lightweight (237 - 340 g, incl. lens)
- Exchangeable lenses & industrial accessories
- TIMConnect software delivered with Software Developer Kit

Software
- Line scan feature
- Display of the thermal image in real time (80 Hz) with recording function (video, snapshot)
- Complete set up of parameters and remote control of the camera
- Detailed analysis of fast, thermodynamic processes
- Output of analog temperature or alarm values via the process interface
- Digital communication via RS232 or DLL for software integration

thermoIMAGER TIM QVGA-G7 / VGA-G7

- Exact temperature measurement on moving glass surfaces due to line scan feature
- Line scan camera feature measures the temperature distribution between the heating zone and the cooling zone e.g. when toughened or tempered safety glass is heat-treated.

thermoIMAGER TIM QVGA-G7

- 16 - 25 depends on lens and focus position

- 1/4" - 20 UNC 6mm deep

- M4 6mm deep

- ø 12

- ø 14

- ø 12

- 5

- 52

- 56

- 46
**Scope of supply**

**TIM QVGA-G7 / VGA-G7**
- TIM process camera incl. a selectable lens
- Operating instructions
- USB cable 1 m
- Software for real-time processing and analyzing thermal images
- Tripod mount
- PIF cable incl. terminal block (1 m)
- Transport case
- Test certificate
Software features / Lenses

**thermoIMAGER TIM**

Comprehensive IR camera software
- License-free analysis software and complete SDK included
- Intuitive user interface
- Camera remote control via software
- Displays several camera images in different windows
- Compatible with Windows 7, 8 and 10
- Data output via PIF hardware interface using up to 3 analog channels

**Video recording and snapshot feature (IR)**
- Recording of video sequences and individual images for later analysis or documentation
- Adjustable frame rate to reduce data volume
- Display of snapshot process for direct analysis

**Online and offline data analysis**
- Real-time temperature information (°C or °F) in main window, as digital display or graphic display
- Detailed analysis using measuring fields, automatic hotspot/coldspot search
- Logical linking of temperature information
- Slow-motion replay without connected camera
- Various layout functions and color palettes to highlight thermal contrasts

**Temperature data analysis and documentation**
- Triggered data collection
- Radiometric video sequences (*.ravi) and snapshots (*.tiff)
- Thermal images as *.tiff or *.csv, *.dat text files incl. complete temperature information
- Data transfer in real time to other software programs via DLL or COM port interfaces
Lenses thermoIMAGER TIM 640 VGA / TIM VGA-G7

<table>
<thead>
<tr>
<th>TIM 640 VGA / TIM VGA-G7</th>
<th>Focal length [mm]</th>
<th>Angle</th>
<th>Minimum measurement distance*</th>
<th>Distance to measurement object [m]</th>
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<td>33°</td>
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FOV = Field of view; HFOV = Horizontal field of view; VFOV = Vertical field of view; DFOV = Diagonal dimension of the total measuring field at the object level; IFOV = Indicated field of view

Table with examples showing which measuring field sizes and pixel sizes are reached at which distance. Various lenses are available for optimal configuration of the camera.

Wide angle lenses have radial distortion due to the angle of their aperture. The TIMConnect software has an algorithm which corrects this distortion.

* Please note: The measurement accuracy of the camera may lie outside of the specifications for distances below the defined minimum measurement distance.

- Standard-, telephoto- and wide angle lenses for optimal adaptation to different applications
- High quality germanium lenses and special anti-reflective coating for excellent optics
- Factory-calibrated lenses for easy exchange of optical system without recalibration

Measuring field sizes can be calculated online at [www.micro-epsilon.com/optikkalkulator](http://www.micro-epsilon.com/optikkalkulator).
Sensors and Systems from Micro-Epsilon

Sensors and systems for displacement, distance and position

Sensors and measurement devices for non-contact temperature measurement

Measuring and inspection systems for metal strips, plastics and rubber

Optical micrometers and fiber optics, measuring and test amplifiers

Color recognition sensors, LED analyzers and inline color spectrometers

3D measurement technology for dimensional testing and surface inspection