

Thermal **STEK** Ti1M

The newly developed thermal camera STEK Ti1M is especially suited for temperature measurements of metals, as these exhibit a distinctly higher emissivity at the short measurement wavelength of **1 μ m** than at measurements in the previously conventional wavelength range of 8-14 μ m.

In parallel with the visualization of a thermal process, the high-performance sensor electronics allow a short reaction time of 1ms for the displaying of the temperature information of the center pixel.



- Wavelength / Spectral Response : 1 μ
- High dynamic CMOS detector with up to 764 x 480 pixels resolution
- Wide measurement ranges from 450 °C to 1800 °C (842 °F to 3272 °F) without sub-ranges
- Up to 1 kHz frame rate for fast processes
- Real-time analogue output with 1 ms response time
- Extensive software package and SDK included
- 1 kHz line scanning function possible
- I/O interface included

Technical details of the STEK Ti1M

Detectors/ Pixels / Optics / Lens (FOV)

| | |
|--------------------------|---|
| Detector | : CMOS (15 µm x 15 µm) |
| Optical resolution | : 764 x 480 pixels @ 32 Hz |
| (switchable)/ Frame rate | : 382 x 288 pixels @ 80 Hz (switchable to 27 Hz) 72 x 56 pixels @ 1 kHz 764 x 8 pixels @ 1 kHz (fast linescanning mode) |
| Spectral range | : 0.85 – 1.1 µm |
| Temperature ranges | : 450 ... 1800 °C (842 ... 3272 °F) (27 Hz mode) 500 ... 1800 °C (932 ... 3272 °F) (80 Hz and 32 Hz mode) 600 ... 1800 °C (1112 ... 3272 °F) (1 kHz mode) |
| Optics | : FOV @ 764 x 480 pixel FOV @ 382 x 288 pixel: For Getting Right Spot Size Click on bellow Link 39° x 25° (f = 16 mm) 20° x 15° (f = 16 mm) https://stek.in/field-of-view-calculator 26° x 16° (f = 25 mm) 13° x 10° (f = 25 mm) 13° x 8° (f = 50 mm) 7° x 5° (f = 50 mm) 9° x 5° (f = 75 mm) 4° x 3° (f = 75 mm) |

Temperature Measurement

| | |
|---|---|
| Thermal sensitivity (NETD) ¹ | : < 2 K (< 900 °C); < 4 K (< 1400 °C) |
| System accuracy ² | : For temperature < 1400 °C: ±1 % of reading for 27/32/80 Hz; ±1,5 % of reading for 1 kHz |
| (at ambient temperature 23 ± 5°C interface) | : For temperature < 1600 °C: ±2 % of reading for 27/32/80 Hz ±2,5 % of reading for 1 kHz PC |
| High speed analog output (@ 1 kHz mode) | : 0 – 10 V real time output of the center pixel (1 ms response time) |

Outputs And Inputs

Standard Process Interface (SPI)

Standard Analog Output (AO) : ONE 0 – 10 V OR 0/10V Selectable from software, (Main measure area, measure area, internal temperature, flag status, recording status, line scan status, alarm, frame sync, fail-safe, external communication).

Standard Analog Input (AI) : ONE 0 - 10 V (Emissivity, ambient temperature, reference temperature, uncommitted value, flag control, triggered snapshots, triggered recording, triggered linescanner, triggered event grabber, reset peak-/value-hold, switch temperature range)

Digital Input Standard Interface (DI): 0/24 V Flag control, , triggered snapshots, triggered recording, triggered linescanner, triggered event grabber, reset peak-/value-hold, switch temperature range

Optional Industrial Process Interface (IPI)

| | |
|--------------------|---|
| Analog Output | : AO 1 , 2 and 3 (0/4-20mA) set able by software |
| Digital Out Put | : Relay output 1, 2 and 3 (open/ closed (red LED on) / 0...30 V, 400 mA) |
| Analog Input | : AI 1 and 2 (0-10V) |
| Digital Input | : DO 1 , Digital input (active-low = 0...0,6 V), High: 24V |
| Fail Safe Output | : 1 Fail-safe relay (open/ closed (green LED on)/ 0...30 V, 400 mA) |
| Cable length (USB) | : 1 m (standard), 5 m, 10 m (3.3 ft [standard], 16.4 ft, 32.8 ft) 5 m (16.4 ft) and 10 m (32.8 ft) also available as HT cable (180 °C) |

Engineering Specifications

| | |
|---|---|
| Ambient temperature (T _{Amb}) | : 5 ... 50 °C ; 200°C (when enclosed in Thermojacket with appropriate flow of water) |
| Storage temperature | : -40 ... 70 °C (-40 °F ... 158 °F) |
| Relative humidity | : 10 - 95 %, non-condensing |
| Enclosure (size/ rating) | : 46 mm x 56 mm x 90 mm (1.81 in x 2.20 in x 3.54 in) / IP 67 (NEMA 4) ³ |
| Weight | : 245 - 311 g [8.6 - 11 oz] (depending on lens) |
| Shock | : IEC 60068-2-27 (25 G and 50 G) |
| Vibration | : • IEC 60068-2-6 (sinus shaped) • IEC 60068-2-64 (broadband noise) |
| Tripod mount | : 1/4-20 UNC |
| Power supply | : 5 V (USB Powered) |

¹at 27 Hz, 32 Hz and 80 Hz

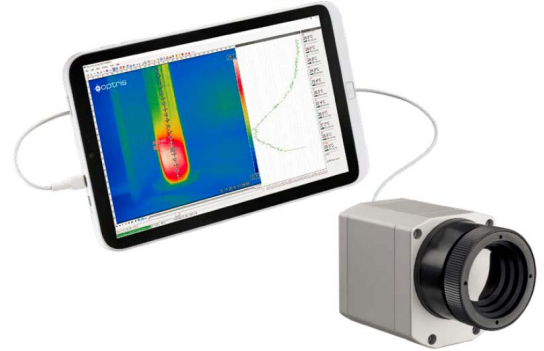
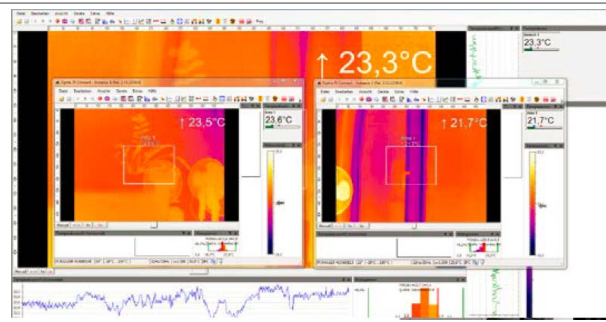
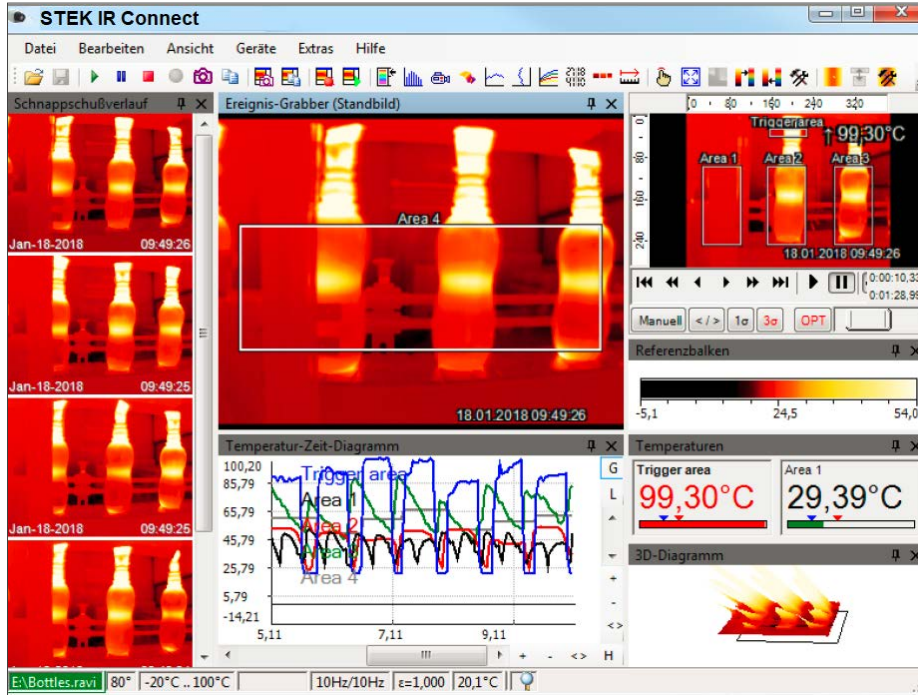
² At an ambient temperature of 25 °C

³Only applies when lens protection tube is used

Scope of supply:

- camera incl. 1 lens,
- lens tube with protective window
- USB cable (1 m [3.3 ft]), with IR Connect Software and SDK
- table tripod,
- PIF cable incl. terminal block (1 m [3.3 ft]),
- software package optris PIX Connect,
- carrying case
- Optional: CoolingJacket, high temperature cable, Process Interface Module (IPI)

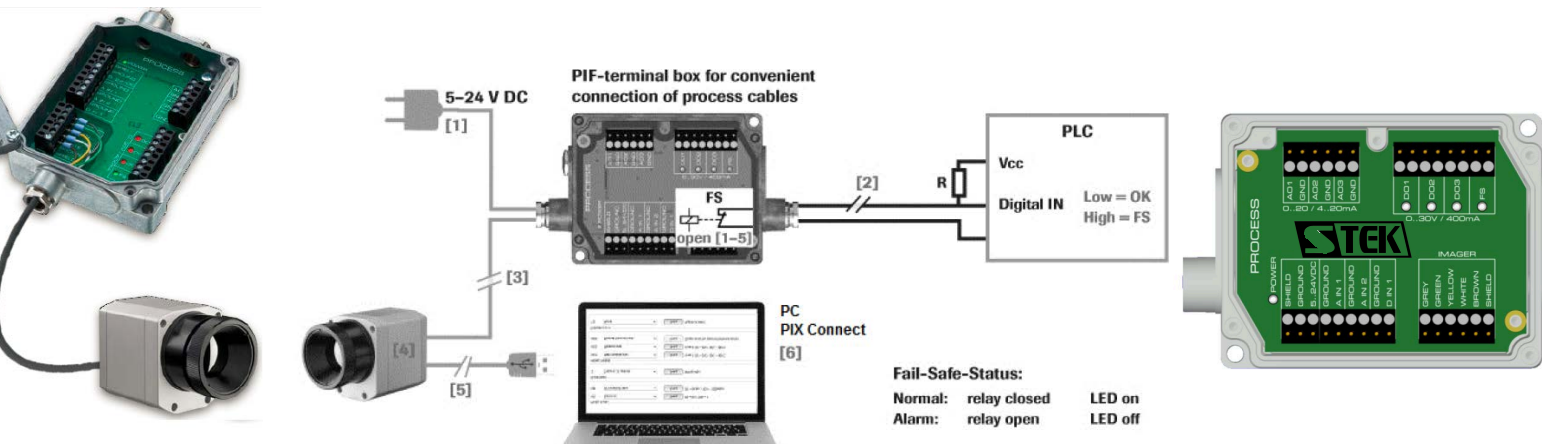




Optional Protection Accessories



Analog /Digital I/O Modules



Ethernet / Fiber Optic Connectivity

