High measuring accuracy
long-term stability

Fast response for
real time process controls

Precise focusing
onto small targets

Proprietary chopped
radiation method

WE KEEP YOUR TEMPERATURE UNDER CONTROL

Infrared
Radiation Pyrometer

KT1911

Non-Contact Temperature
Measurements:
Fast, precise and
application oriented

HEITRONICS
Infrarot Messtechnik
The KT19II implements the most advanced infrared technology of the forthcoming generation. New performance features bring added functionality beneficial to difficult and complex applications. The KT19II sets unsurpassed standards in radiation pyrometry. It is the ultimate high performer for non-contact temperature measurements to cope with extremely unfavorable boundary conditions. The magnitude of available options and freely selectable operating parameters allows ideal adaptation for the specific requirements of all feasible applications.

The KT19II excels by a number of unequaled performance data.

The response time is adjustable from 5 msec, to monitor and control extremely short production cycles, up to 10 minutes, to integrate measurements in long-term thermal processes with an extremely high resolution.

The linearity error of less than 0.02 K over the entire temperature range allow calibration of the KT19II on a suitable blackbody calibration source with a minimum of fixed points and with high accuracy.

The complete elimination of thermal drift at low measuring temperatures by the unique chopped radiation method and the high resolution of 10 mK are necessary prerequisites to deploy the KT19II as transfer standard in infrared equipment calibrations.

The integrated multifunctional display, a unique implementation in pyrometric instrumentation, makes menu selections as easy as a call from a cellular phone, and allows the complete configuration of all functions and specific operating parameters.

Easy setup: Via the digital interface the KT19II can be configured from a PC. Transfer rate up to 115,200 bps.

Data evaluation on the PC: Measured temperature profiles are directly displayed in Windows-graphics, as shown below.

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A Multitude of Potential Applications

Interchangeable infrared lenses, optical spacers, and the option of different detector sizes allow the choice of more than 530 optical configurations for an optimum focus on small or extended targets. Other options include optical view finder or laser pointer for accurate aiming the KT19II onto the target. The laser beam flashes periodically for better identification on dark colored target surfaces.

<table>
<thead>
<tr>
<th>Target size dimensions for 26 mm lenses and detector type C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target size in mm</td>
</tr>
<tr>
<td>Working distance in mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target size dimensions for 38 mm lenses and detector type C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target size in mm</td>
</tr>
<tr>
<td>Working distance in mm</td>
</tr>
</tbody>
</table>

Typical target size configurations: Only for lenses and detector combinations indicated above.

Applications

The new instruments of the KT19 Series II incorporate advanced signal processing based on the latest digital technology. The improved performance of the newly integrated features and the open architecture of the digital software guarantee the possibility of later upgrades for future applications.

As a result of the application oriented development, the KT19 Series II covers a broad range of potential applications, in research, in laboratory explorations, or as an integral part in industrial manufacturing processes.

- Temperature monitoring in steel milling
- Temperature measurements in varnishing plants
- ... and in plastic foil production

Other options include optical view finder or laser pointer for accurate aiming the KT19II onto the target. The laser beam flashes periodically for better identification on dark colored target surfaces.

Accessories

Extensive accessories support the KT19 Series II. Optical attachments for 90° deflection, various mechanical attachments and adapters for mounting blackbody calibration sources, intelligent temperature meters, software for data processing and data logger, etc. are available.

The integrated laser pointer marks the target size of the field of view.

Portable Blackbody calibration source SW15

A specially designed protective and coolable housing extends the permissible ambient temperature to 300°C.

Protective coolable housing with mounting attachment

A special feature of the KT19 Series II: Emissivity, transmissivity, and reflectivity of the target can be separately programmed with their corresponding ambient temperatures for optimum control of target temperatures.

Air purge attachment

Deployment of non-contact temperature measurements cover widely spread applications on glass and metal surfaces, plastic foils, ceramics, gases and flames.
Selection Guide: Infrared Radiation Pyrometer KT19-Series II

<table>
<thead>
<tr>
<th>Model</th>
<th>Spectral Response/µm</th>
<th>T_min. ... T_max. °C</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>KT19.01</td>
<td>2.00 ... 2.70</td>
<td>250 ... 2,500</td>
<td>metals, metal oxides, ceramics, glass volume</td>
</tr>
<tr>
<td>KT19.02</td>
<td>2.00 ... 4.50</td>
<td>100 ... 1,200</td>
<td>metals, metal oxides, ceramics, glass volume (lower temperatures)</td>
</tr>
<tr>
<td>KT19.21</td>
<td>3.43 ± 0.15</td>
<td>80 ... 350</td>
<td>plastic films with CH-band, org. coating materials (oil, paints)</td>
</tr>
<tr>
<td>KT19.23</td>
<td>6.60 ± 0.15</td>
<td>40 ... 400</td>
<td>thin film plastics, e.g. PE, PP, PVC</td>
</tr>
<tr>
<td>KT19.24</td>
<td>7.93 ± 0.15</td>
<td>0 ... 400</td>
<td>thin film plastics, e.g. PET, PA, fluorocarbon</td>
</tr>
<tr>
<td>KT19.25</td>
<td>8.05 ± 0.15</td>
<td>0 ... 400</td>
<td>thin film plastics, e.g. PETE, PET, PVC</td>
</tr>
<tr>
<td>KT19.41</td>
<td>3.90 ± 0.10</td>
<td>200 ... 2,500</td>
<td>glass volume, measurements through hot gases and flames</td>
</tr>
<tr>
<td>KT19.42</td>
<td>4.90 ... 5.50</td>
<td>100 ... 2,500</td>
<td>glass (processing), quartz</td>
</tr>
<tr>
<td>KT19.43</td>
<td>7.50 ... 8.20</td>
<td>0 ... 2,500</td>
<td>glass, quartz, ceramics, glass (thin plates)</td>
</tr>
<tr>
<td>KT19.61</td>
<td>4.26 ± 0.13</td>
<td>300 ... 2,500</td>
<td>hot gases and flames (CO₂-band)</td>
</tr>
<tr>
<td>KT19.62</td>
<td>4.50 ± 0.10</td>
<td>300 ... 2,500</td>
<td>hot gases and flames (CO²- and CO-band)</td>
</tr>
<tr>
<td>KT19.63</td>
<td>4.66 ± 0.10</td>
<td>300 ... 2,500</td>
<td>hot gases and flames (CO₂-band)</td>
</tr>
<tr>
<td>KT19.69</td>
<td></td>
<td>400 ... 2,500</td>
<td>hot gases in incinerators, rotary kilns</td>
</tr>
<tr>
<td>KT19.81</td>
<td>8 ... 10</td>
<td>0 ... 1,000</td>
<td>paper, textiles, rubber, wood, ceramics, thicker plastics (&gt;1mm), painted or coated surfaces, asphalt, building materials, electronic components, food, liquids</td>
</tr>
<tr>
<td>KT19.82</td>
<td>8 ... 14</td>
<td>-50 ... 1,000</td>
<td>300 ... 2,500 hot gases and flames (CO₂-band)</td>
</tr>
<tr>
<td>KT19.83</td>
<td>8 ... 20</td>
<td>-50 ... 1,000</td>
<td>300 ... 2,500 hot gases and flames (CO₂-band)</td>
</tr>
<tr>
<td>KT19.85</td>
<td>9.6 ... 11.5</td>
<td>-50 ... 200</td>
<td>300 ... 2,500 hot gases and flames (CO₂-band)</td>
</tr>
<tr>
<td>KT19.xx</td>
<td>several spectral ranges available, temperature range depending on application</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General Specifications

- **Temperature ranges**: Depends on model, minimum and maximum measuring temperature, see table above
- **Temperature resolution (NETD)**: Depends on model, detector size, measuring temperature and response time; typical value ±0.1°C
- **Accuracy**: ±0.5°C plus 0.7% of the difference between target temperature and housing temperature
- **Long-term stability**: Better than 0.01% of the absolute measured temperature in Kelvin/month
- **Lenses**: Several far-focus and close-focus lenses with different optical characteristics, vacuum tight types available
- **Field of view**: Depends on model, detector and lens type. For close-focus lenses: from 0.7 mm diameter at <20 mm distance; for far-focus lenses: typically 10 to 20 mm diameter at distances >1,000 mm
- **Aiming options**: Built-in viewfinder with display, integrated laser aiming sight, more optical and mechanical options are available
- **LCD-graphic-display at rear**: for measured value display, programmed parameter, alarm display and programming
- **Keyboard at rear for programming of**: Emissivity, reflectivity, ambient temperature, alarm relay, analog output, response time, temperature unit, serial interface, read-out of MIN/MAX value, calibration procedure and laser ON/OFF-switch
- **Emissivity / reflectivity**: Adjustable from 0.100 to 1.000 in 0.001 increments
- **Response time**: Programmable: 5 msec to 10 min
- **Analog output**: 4 scalable output signals: linear voltage or current, 0...1 V, 0...10 V, 0...20 mA or 4...20 mA (programmable)
- **Serial interface**: RS-232 interface, bi-directional, baud rate 9,600 to 115,200 bps, for programming and data transfer
- **Alarm relays**: Two set-points indicated on LCD display
- **Thermal switch**: Monitoring the housing temperature
- **Power requirements**: 22...30 VDC or 24 VAC ±10%, 48...400 Hz; ≤150 mA with 24 VDC
- **Permissible ambient temperature**: -20°C...70°C with protective and cooling housing 300°C
- **Storage temperature**: -20°C...70°C
- **Housing protection/Weight**: IP 65 (DIN 4005) NEMA 4 equivalent, approx. 2.5 kg

*Please ask for our additional literature (temperature ranges, temperature resolution, field of view) "Technical Data", "Field of View Diagrams", "Options and Accessories".

Housing dimensions in mm (inches)