

## CellaTemp PA 21



CellaTemp PA 21 is a digital pyrometer featuring fibre optics to measure temperatures ranging from 350 to 2000 °C. The sensor head is housed separately from the electronics assembly. Both the sensor head and the fibre optic cable are unsusceptible to electromagnetic radiation. The optical sensor head can withstand ambient temperatures up to 250 °C without cooling. CellaTemp PA 31 is ideal for cramped, hard-to-access locations.

### Features:

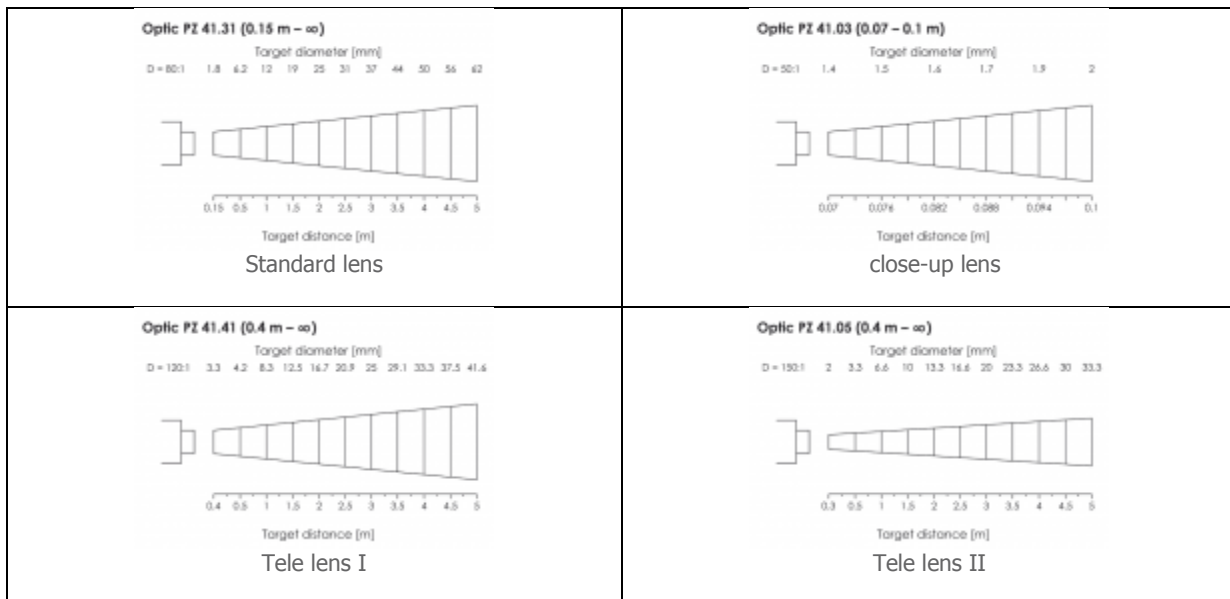
- Range: 350 to 2000 °C
- Digital input / output
- Focusable, interchangeable optics allow for precise distance adjustment
- Precision lenses with broadband antireflection coating
- LED display is easy to read from a distance
- Test current can be applied to perform diagnostics
- Sensor head and fibre optic cable withstand ambient temperatures up to 250 °C

### Pyrometer with Laser

<b>Measuring range:</b> (adjustable in partial ranges) 350 ... 2000 °C	<b>Linearisation:</b> digital via microcontroller	<b>Dimensions:</b> Ø 65 x 220 mm (when connector is attached)
<b>Sensors:</b> photo diode	<b>Repeatability:</b> 2 K	<b>Housing material:</b> Stainless steel
<b>Spectral sensitivity:</b> 1.1 - 1.7 µm	<b>Sighting device:</b> Laser target marker	<b>Mounting:</b> External thread M 65 x 2 length 40 mm
<b>Focussing ranges:</b> 0.07 ... 0.1 m (close-up lens) 0.15 m ... ∞ (standard lens) 0.4 m ... ∞ (telephoto lens)	<b>Ambient operating temperature:</b> 0 to 65 °C sensor: - 20 ... 250 °C fibre optic cable: - 20 ... 85 °C optional up to 250 °C	<b>Weight:</b> Approx. 0.9 kg
<b>Fibre optic waveguide:</b> quartz fibre, can be screwed off at both sides, length and design are variable	<b>Indication of Overheating:</b> If the internal temperature of the pyrometer exceeds 80 °C the analogue output will show a value > 20.5 mA.	<b>Connection:</b> with 8-pin connector
<b>Distance to target size ratio:</b> 50 : 1 (close-up lens) 80 : 1 (standard lens) 120 : 1 (telephoto lens)	<b>Storage temperature:</b> electronics: -20 to 80 °C sensor: - 20 ... 250 °C fibre optic cable: - 20 ... 85 °C optional up to 250 °C	<b>Protection:</b> IP 65 according to DIN 40050 (when connector is attached)

<b>Digital output:</b> Periodic output of measurement data with adjustable cycle time	<b>Temperature coefficient with reference to 23 °C:</b> 0.25 K / K (for T < 500 °C) 0.05 % / K (for T ≥ 500 °C) of temperature reading	<b>Adjustable parameters:</b>  <b>Analogue output 1 &amp; 2:</b> source/ scaling
<b>Analogue output 1 &amp; 2:</b> 0(4) to 20 mA linear, switchable, scalable (4 - 20 mA is standard)	<b>Data communication:</b> USB / RS485 Integrated menu-driven user interface to set parameters and transmit data to a PC	<b>Digital input output 1 &amp; 2:</b> source/ switch point
<b>Resistance:</b> max. 500 Ω	<b>Analogue input:</b> 0 - 10 V	<b>Transmission factor</b>  <b>Compensation for reflected ambient radiation</b>  <b>Look-up table for temperature alignment</b>  <b>Emissivity ε:</b> 10.0 to 99 % increment size 1 %
<b>Response time <math>t_{98}</math>:</b> ≤ 2 ms for T ≥ 1000 °C	<b>Digital output:</b> 2 Open collector outputs 24 V; ≤ 30 mA	<b>Smoothing function <math>t_{98}</math>:</b> 0 - 16 sec
<b>Resolution Analogue output:</b> 0.2 K + 0.03 % of the adjusted span	<b>Digital input:</b> 2 to 24 V	<b>Memory modes:</b> - Min./Max. (peak picker) - Double maximum with adjustable hold time
<b>Resolution Display:</b> 1 K	<b>Power supply requirements:</b> 24 V DC +10% / -20% current input ≤135 mA (150 mA with laser) Ripple: ≤ 200 mV	<b>Optional accessories:</b> calibration certificate according to ISO 9001  calibration certificate according to DKD  large variety of mounting devices, digital displays, software, etc.
<b>Resolution USB / RS 485:</b> 0.1 K at terminal operation		
<b>Measuring uncertainty:</b> 1 % (at ε =1.0 and T <sub>A</sub> =23 °C)		

## Field of view diagrams for Ø 30 mm head:



## Field of view diagrams for Ø 16 mm head:

