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Manual
Infrared Thermometer PCE-IR 5

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Contents

1 Introduction

Thank you for purchasing a PCE-IR 5 from PCE Instruments.
The PCE-IR 5 gives you the possibility to measure the surface temperature of objects without contact. The most important advantage of an infrared thermometer is that you can measure areas that are normally hard to access, as well as moving parts. The temperature sensor, the electronics and the optical system are protected by the metal case of the PCE-IR 5. The infrared thermometer is easy to assemble and the measuring unit can easily be connected to the installation equipment. Moreover, you can upgrade the PCE-IR 5, e. g. by adding a protective ring or by making it possible to mount the thermometer in a three-dimensional 90 ° angle. This will cover all requirements for working under various conditions.

2 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. There is no warranty of damages or injuries caused by non-observance of the manual.

- The device may only be used in the approved temperature and humidity range which can be found in the specifications.
- The case should only be opened by qualified personnel of PCE Instruments.
- The instrument should never be placed with the user interface facing an object (e.g. keyboard side on a table).
- You should not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth / use only pH-neutral cleaner.
- The device may only be used with original PCE accessories or equivalent.

This user's handbook is published by PCE Instruments without any guarantee.

We expressly point to our general guarantee terms which can be found in our general terms of business.

If you have any questions, please contact PCE Instruments.

3 Specifications

3.1 General technical data

Protection class	IP65
Ambient temperature	0 … 60 °C
Storage temperature	-20 … +80 °C
Relative humidity	10 … 90 % (non-condensing)
Material	aluminium
Cable length	1.8 m (standard)

3.2 Electrical connection

Power supply	24 VDC
Max. impedance	500 Ω
Linear output signal	4 … 20 mA

3.3 Measuring functions

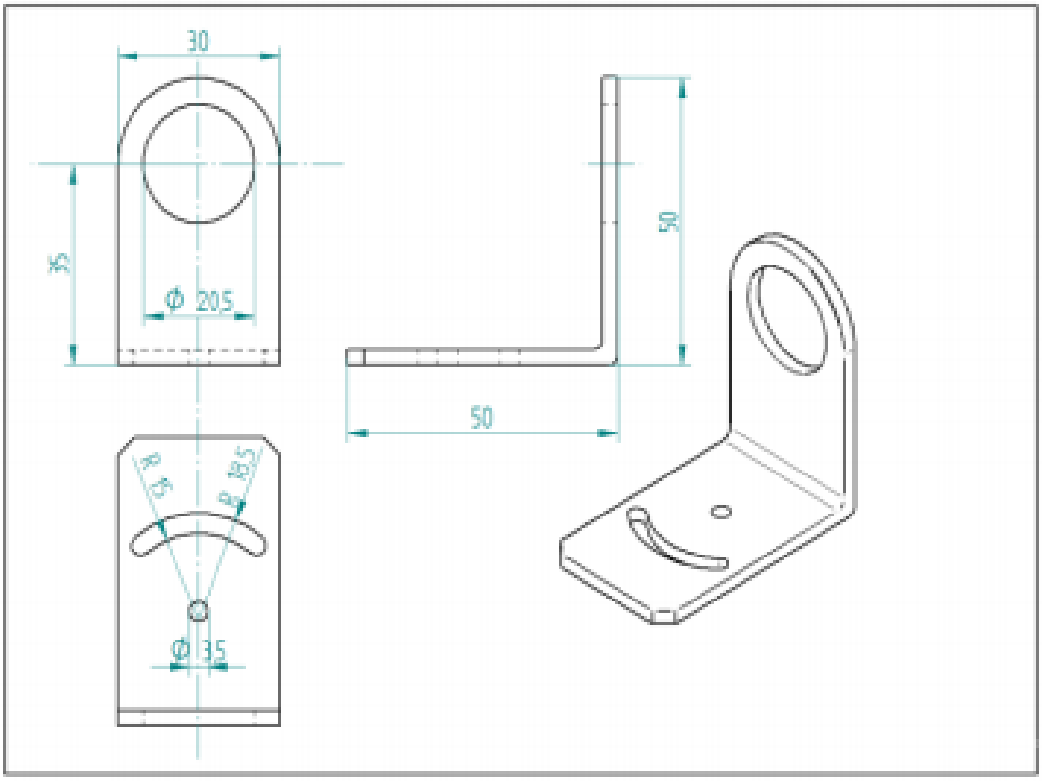
Spectral range	8 ... 14 µm
Temperature range	0 … 500 °C
Distance coefficient	15:1
Response time	500 ms
Emissivity	fixed at 0.95
Accuracy (temperature)	±1 % / ±1.5 °C of measured value (higher value applies), measured at an environmental temperature of 23 °C ±5 °C
Repeatability	±0.5 % / ±1 °C of measured value, (higher value applies), measured at an environmental temperature of 23 °C ±5 °C

4 System description

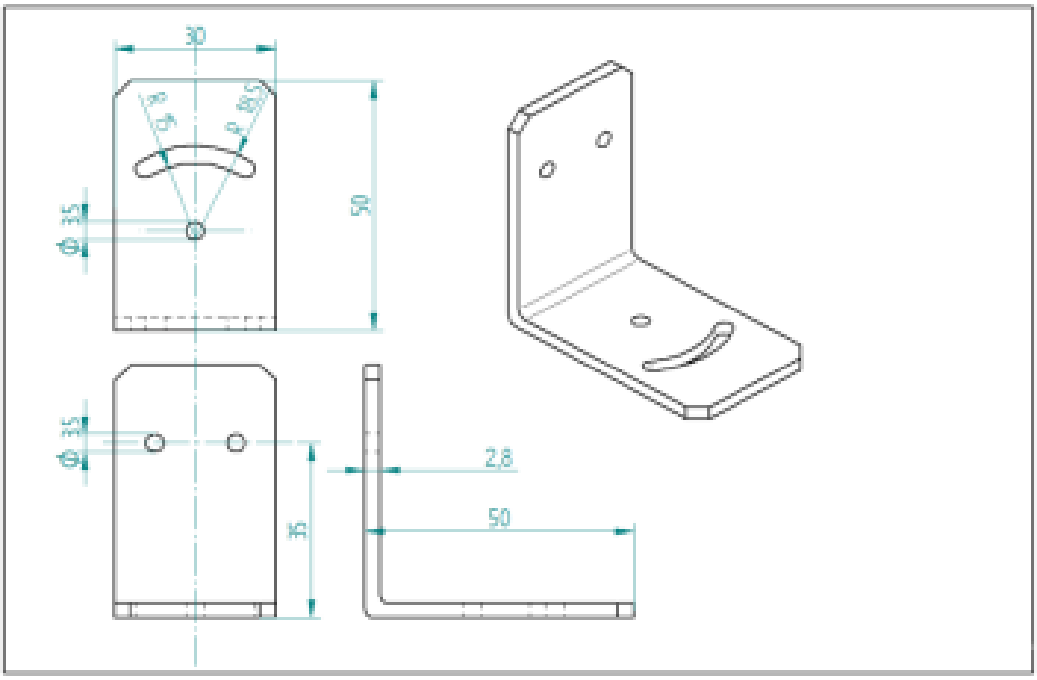
Length of the infrared thermometer (without cable): 120 mm

Diameter of the infrared thermometer: 20 mm

Outer dimensions of the adjustable installation equipment (90 ° bracket)



Dimensions of the three-dimensional installation equipment



5 Information and instructions

5.1 Infrared measuring principle

Infrared thermometers measure temperatures of objects without contact. The surface temperature is measured on the basis of the emitted infrared intensity. The fact that the measurement can be carried out without contact is the most important advantage of an infrared thermometer. Thus, the user can quickly and easily make measurements in areas which are normally hard to access or measure moving objects.

5.2 Delivery content

Standard package: 1 x PCE-IR5 (1.8 m cable)
Directly on receipt of your goods, please inspect both the packaging and the device itself for any signs of damage. If so, contact the seller immediately. Keep the damaged packaging.
The serial number of the product can be found on the sticker which you can find on the product. Please have it ready when contacting the customer service.

5.3 Installation

The PCE-IR5 can be installed by means of the installation equipment and aligned accordingly.

Cabling in current loop

Red	24 VDC positive
Black	24 VDC negative
Colourless wire	Protective earth conductor

Output: 4 … 20 mA linear signal, 0.032 mA/°C

5.4 Electronic interference

To avoid disturbances due to electromagnetic fields during the measurement, please note the following: Do not install the infrared thermometer within the close proximity of electric motors, heavy-duty cables, etc. Consider using the protective ring. The probe head protection must be correctly grounded.

5.5 Measuring dimensions

When using the infrared thermometer at a distance from the object of 20 mm, the measuring spot will be 1 mm. The measuring spot will increase when the thermometer is farther away from the object to be measured. When the distance is 200 mm, the measuring spot will have a diameter of 10 mm. The ratio between the distance from the thermometer to the object and the size of the measuring spot is the optical resolution, which is 20:1 in this case.

5.6 Lens cleaning

To make sure that the measured values are accurate, the infrared thermometer's lens must always be kept clean. By doing so, you can avoid faulty measurements, damage of the lens and of the entire device. In case dust or similar materials are on the lens, soak a cloth in pure alcohol and then use it to clean the lens.

5.7 Maintenance

If you have any problems using the infrared thermometer or any questions, please contact our customer service. Our staff members will give you technical advice on the thermometer and its maintenance. Since the device is very simple, it will normally be possible to solve your problems via telephone, which will make it unnecessary to send the device back.

6 Disposal

For the disposal of batteries, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

If you have any questions, please contact PCE Instruments.

7 Contact

If you have any questions about our range of products or measuring instruments, please contact PCE Instruments.

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