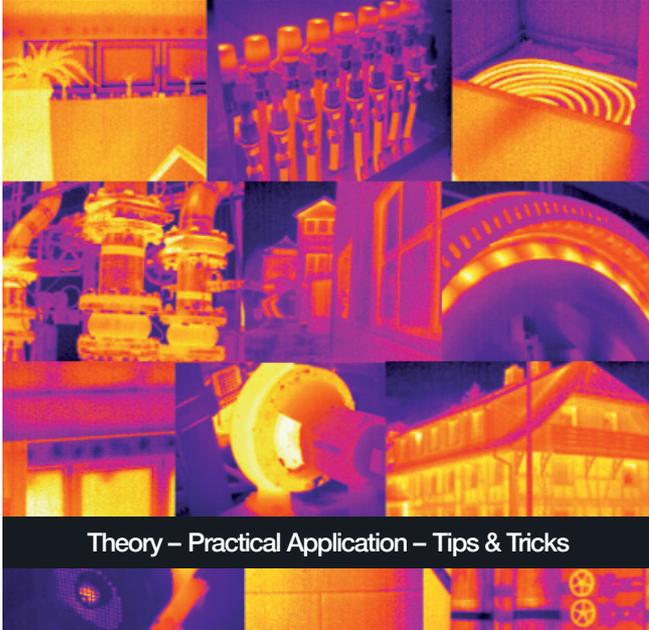


Pocket Guide Thermography



Theory – Practical Application – Tips & Tricks

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- Never perform measurements in thick mist or above water vapour.
- Do not perform measurements when air humidity is condensing on the thermal imager (cf. "Wetness, snow and hoarfrost on the surface", p. 17).
- Avoid wind and other air flows during the measurement wherever possible.
- Note the speed and direction of air flows during the measurement and factor these data into your analysis of the thermal images.
- Do not perform measurements in heavily polluted air (e.g. just after dust has been stirred up).
- Always measure with the smallest possible measuring distance for your measurement application in order to minimize the effect of any possible suspended matter in the air.



5. Light

Light or illumination do not have a significant impact on measurement with a thermal imager. You can also take measurements in the dark, as the thermal imager measures long-wave infrared radiation.

However, some light sources emit infrared heat radiation themselves and can thus affect the temperature of objects in their vicinity. You should therefore not measure in direct sunlight or near a hot light bulb, for example. Cold light sources such as LEDs or neon lights are not critical, as they convert the majority of the energy used into visible light and not infrared radiation.

2.2 Determining ϵ and RTC in practical applications

To determine the emissivity of the surface of the measuring object, you can, for example:

- refer to the emissivity given in a table (cf. "Emissivity table", p. 50).

Caution:

Values in emissivity tables are only ever guideline values. The emissivity of the surface of your measuring object may therefore differ from the specified guideline value.

- determine the emissivity by means of a reference measurement with a contact thermometer (e.g. with the testo 905-T2 or testo 925) (cf. "Method using a contact thermometer", p. 25).
- determine the emissivity by means of a reference measurement with the thermal imager (cf. "Method using the thermal imager", p. 26).

Determining the emissivity by means of a reference measurement

1. Method using a contact thermometer

First measure the temperature of the surface of the measuring object with a contact thermometer (e.g. testo 905-T2 or testo 925). Now measure the temperature of the surface of the measuring object with the thermal imager with a preset emissivity of one. The difference between the temperature values measured by the contact thermometer and the thermal imager are the result of the emissivity being set too high. By gradually lowering the emissivity setting, you can change the measured tempera-