

Non-contact measurement: What do I need to keep in mind?

There are instruments which measure the temperature without direct contact with the food: **infrared measuring instruments**. They are suitable for obtaining a rapid overview of the temperature of the products. This so-called non-destructive measurement enables the temperature to be determined without the instrument coming into contact with the product.

How does infrared measuring technology work?

Every object warmer than the absolute zero point temperature (-273°C) radiates thermal energy. This thermal energy is in the infrared range which is not visible to the human eye. This thermal energy can be measured and the temperature can be displayed using special optical sensors.

Measuring instrument optics

Infrared measuring instruments are classified by their optics. This number, e.g. 8:1, describes the ideal distance between the measuring instrument and the object of the measurement. This means that at a distance of 8 cm, a measurement spot with a diameter of 1 cm is measured. The larger this ratio, the greater the distance from the measurement object at which the measurement can be carried out. It is important to keep in mind that the measurement spot should not be larger than the product/packaging.

Do not look directly into the laser.



Infrared measurement
refrigerated shelving



Infrared measurement in a
deep-freezer



Infrared measurement in
Incoming Goods

Non-contact measurement: Tips for precise measurement

- The closer the better. This ensures that only the measurement object is measured, and not its surroundings too. With increasing distance between the measuring instrument and the measurement object, the diameter of the measured area (measurement spot) increases.
- Make sure that the measurement object is larger than the distance between the two laser points. The smaller the measurement object, the closer you have to get to the object.
- Acclimatize the measuring instrument to the ambient temperature: Either store the measuring instrument where it is used, or wait until the temperature of the measuring instrument has acclimatized to that of the measurement location.
- Measure packaged foods at places where the product and the packaging are in direct contact. Air pockets can falsify the result.
- Measure clean surfaces. Dirt, dust and frost can falsify the measurement result.

