

INFRARED THERMOMETERS – Questions and Answers

Zedflo Australia

Why use non-contact infrared thermometers?

Non-contact infrared thermometers use infrared technology to quickly and conveniently measure the surface temperature of objects. They provide fast temperature readings without physically touching the object. You simply aim, pull the trigger and read the temperature on the LCD display.

Lightweight, compact and easy to use, infrared thermometers can safely measure hot, hazardous or hard to reach surfaces without contaminating or damaging the object. Also, infrared thermometers can provide several readings per second, as compared to contact methods where each measurement can take several minutes.

How do infrared thermometers work?

Infrared thermometers capture the invisible infrared energy naturally emitted from all objects warmer than absolute zero. Infrared radiation is part of the electromagnetic spectrum which includes radio waves, microwaves, visible light, ultraviolet, gamma and x-rays. Any object emits energy somewhere within that range.

Will infrared sensors measure air?

No. An infrared thermometer needs a surface to measure. The thermometers are specifically designed so that the air between the sensor and target does not affect the measurement.

What is an emissivity factor?

An emissivity factor is used to account for reflected versus emitted radiation. An item with no reflective property would be said to have an emissivity of 1. Reflective items have lower emissivity levels. If you want to adjust emissivity on a thermometer, you can use figures from a reference table supplied with the thermometers.

What is spectral response?

The wavelength of infrared energy used by the thermometer for measuring temperature.

Can infrared sensors measure water or ice?

Yes. Any object warmer than absolute zero emits energy.

Does colour affect infrared measurement?

No. However, emissivity does. This is a primary concern for metallic materials and can be easily solved by adjusting the sensor. Most of the infrared thermometers have adjustable emissivity.