Infrared thermometer

DIT-500

index: WMGBDIT500

LASER POINTER

Professional and compact infrared (IR) thermometers are a solution for problems in every area where specific thermal conditions are required. The intuitive one-hand operation of the devices and the ergonomically designed gun-type housing allow for trouble-free daily work.

Easy way to quick and accurate temperature measurements

Measurements

- **Precise non-contact temperature measurement.**
- Emissivity digitally adjustable from 0.10 to 1.00.
- Resolution from 0.1°C and 0.1°F.
- Laser pointer: double.
- Input for type K temperature probe.

Applications

- HVACR areas.
- Electrical areas.
- Mechanical areas.
- Industry areas.

Additional functions

- Displaying MAX, MIN, AVG, DIF temperatures.
- Automatic Data Hold
- Temperature unit selection: °C / °F.
- High and Low alarm.
- Backlit LCD display.
- Auto power off.

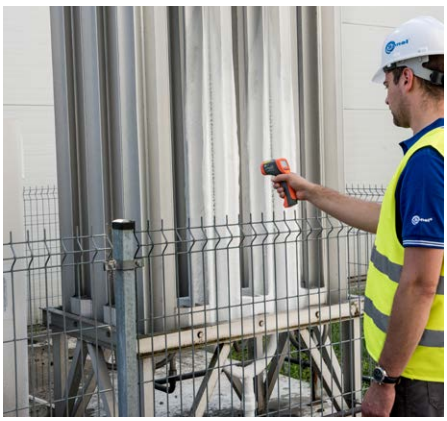
Special features

- Temperature measurements in the range of **-50°C...1600°C.**
- Operation with an external temperature probe - temperature measurement range **-50°C...1370°C**.
- D:S ratio of **50:1**.
- Data memory (LOG) for **100 measurements**.
- Double laser pointer (marking the measurement area).
- Transmission of current readings to computer via USB cable.

HVACR areas

Electrical areas

Mechanical areas



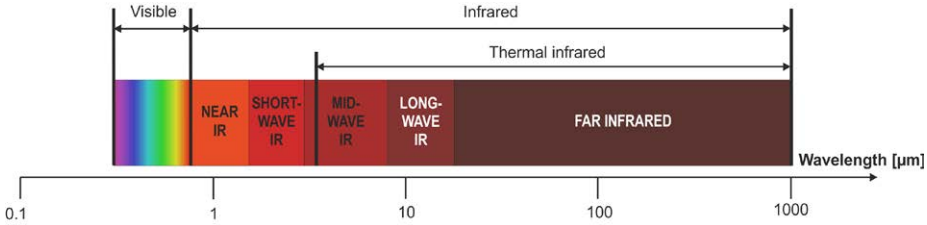
Industry areas

Infrared measurements

Infrared temperature meters are used to determine the surface temperature of the tested object. The optical system of the instrument detects the radiation that is emitted, reflected and transmitted, then gathers them and focuses it in the detector. The electronic system converts the optical data into a temperature value. To increase the precision of measurement and facilitate targeting, the device is equipped with a laser pointer.

Infrared radiation

Infrared radiation is generated by the movement of electrons inside the atoms of a given material. It is electromagnetic radiation with a wavelength in the range of 780 nm...1 mm. It is emitted by any material with temperature above 0°K (-273.15°C). The emission increases with increasing temperature, whereas the wavelength decreases.



Emissivity factor

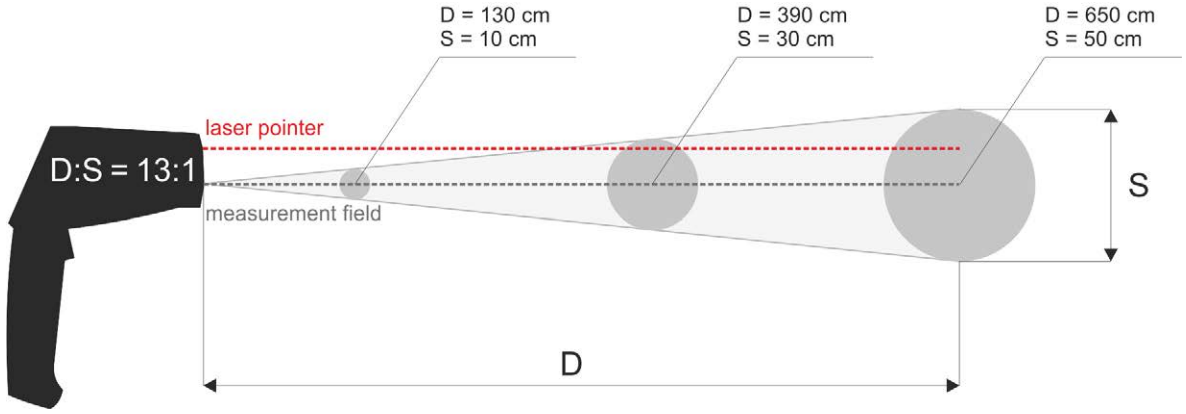
It is a parameter that determines the ability of a material to emit infrared radiation. Its values are in the range 0...1.

- A value equal to 1 is the emissivity of a black body that absorbs all radiation.
- A value equal to 0 is the emissivity of a white body (reflecting 100% of radiation).

Each object has its own emissivity factor, depending on the type of material, surface roughness, viewing angle, wavelength and temperature.

The D:S ratio

The D:S ratio (distance to spot) determines the relationship between **the distance of the pyrometer** from the tested object and t**he diameter of its circular field of view**, from where it collects the radiation. The tested area becomes larger as the meter moves away from it, i.e. the share of the tested object's area in this field decreases. Hence, the smaller is the measured target, the smaller should be the distance to it. Therefore, the D:S ratio has a significant influence on the accuracy and precision of the temperature reading.



Infrared temperature range

Infrared temperature range	D:S	Resolution	Infrared temperature range	Accuracy ±(% m.v. + digits)
-50.0...+999.9°C -58.0...999.9°F	50:1	0.1°C 0.1°F	-50...+20°C -58...+68°F	±2.5°C ±4.5°F
			20...400°C 68...752°F	±(1.0% m.v. + 1°C) ±(1.0% m.v. + 1.8°F)
1000...1600°C 1000...2912°F		1°C 1°F	400...800°C 752...1472°F	±(1.5% m.v. + 2°C) ±(1.5% m.v. + 3.6°F)
			800...1600°C 1472...2912°F	±2.5% m.v.

Temperature range for K probe

Range	Resolution	Accuracy ±(% m.v. + digits)
-50.0...+999.9°C -58.0...+999.9°F	0.1°C 0.1°F	±(1.5% m.v. + 3°C) ±(1.5% m.v. + 5°F)
1000...1370°C 1000...2498°F	1°C 1°F	±(1.5% m.v. + 2°C) ±(1.5% m.v. + 3.6°F)

Technical specification

LCD display		segmented, with backlight
Spectral sensitivity		8~14 µm
Emissivity		digitally adjust from 0.10 to 1.00
Semi-conductor laser diode	**output power**	<1 mW
	wavelength	630~670 nm
	class	class 2 (II) laser
Power supply		9 V alkaline battery NEDA 1604A or IEC 6LR61
Operating temperature range		0...50°C | 32...122°F
Storage temperature		-20...+60°C | -4...+140°F
Humidity		10...90%
Indication of range overflow		the display will read the symbol "----"
Response time		150 ms
Weight		350 g | 0.8 lbs
Dimensions		230 x 155 x 54 mm 9.0" x 6.1" x 2.1"

Abbreviation „D:S" used in the specification of measurement means a distance-to-spot ratio.
Abbreviation „m.v." used in the specification of measurement means a measured value.

Standard accessories

Carrying case

Mini-USB data transmission cable

WAPRZUSBMNIB5

Mini tripod (1/4")

WAPOZSTATYW

K-type temperature probe

WASONTEMK

Factory calibration certificate

Optional accessories

K-type temperature probe (bayonet)

WASONTEMP

K-type temperature probe (metal)

WASONTEMK2

M-13 carrying case

WAFUTM13

Calibration certificate with accreditation