IR-01

Low-Cost Infrared Thermometer

Description

Non-contact measurement of temperature with infrared thermometers is a modern, reliable and fast system of measuring temperatures.

The device measures the heat radiation originating from an object. From this, it determines the surface temperature while taking the emission factor of the object of measurement in to regard. The emission factor is determined by the optical properties of the object of measurement and depends on the material and the surface characteristics of the object of measurement. Commonly used values for faint and non-translucent objects of measurement within the infrared range are estimated at approx. 0.95. For extremely reflecting objects the emission factors can be 0.3 to 0.2.

The IR-01 captures the temperature of a measuring spot that gets larger as the distance from the device increases. In this, a Laser pilot light facilitates the orientation of the thermometer and thus the determination of the exact location of measurement

Range of application

Using infrared thermometers becomes necessary, if the object of measurement cannot be or should not be contacted for reasons such as:

- it is too far,
- it is moving,
- the object is under voltage,
- it is a toxic chemical,
- the object of measurement must remain sterile or
- it is too hot to allow measurement with a thermoelement.

- **Ergonomic and robust**

- **Fast and reliable**

- **Easy to operate**

- **Operating range -32°C...+500°C**

- **Adjustable emissivity from 20...100%**

- **Laser pilot light**

Technical specifications

Operating range:	-32°C...500°C (400°C)	**Functions:**	Normal, max, min, mean value (AVG), deviation from starting value (DIF), continuous measuring with locking lever, automatic cut off
Emissivity:	adjustable from 20...100%		
Accuracy:	1% of measuring value in °C + 1 Digit (2% of measuring value in °C + 1 Digit for IR-01.1)		
		Display resolution:	0.1 K of -10°C...200°C in AVG mode, 1 K in other type of measuring
Repeatability:	0.5% of measuring value in °C + 1 Digit (1% of measuring value in °C + 1 Digit for IR-01.1)		
Temperature coefficient:	0.03% / K (at 23°C)	**Working temperature:**	0...55°C / 32...131°F
		Supply:	9 V Battery
Response time t90:	0.3 s	**Viewing device:**	Laserpilot light (only IR-01.2)
Spectral range:	8...14 µm (no effect due to water or CO_2)	**Weight:**	320 g (including battery)
IR-Detector:	Thermopile	**Housing material:**	ABS
Display illumination:	automatic	**Protection class:**	IP 20
Temperature display:	°C and °F adjustable,	**Battery life (alkaline batteries):**	25 h
Large display:	3-digit, 9 mm height		
Small display	4-digit, 4.5 mm height		

Optics

spot diameter

ø 20 mm for IR-01.4
ø 24 mm for IR-01.3
ø 37 mm for IR-01.2
ø 60 mm for IR-01.1

ø 20 mm for IR-01.4
ø 33 mm for IR-01.3
ø 66 mm for IR-01.2
ø 100 mm for IR-01.1

ø 60 mm for IR-01.4
ø 81 mm for IR-01.3
ø 140 mm for IR-01.2
ø 220 mm for IR-01.1

ø 20 mm

0

0,5 m
distance

1 m

2 m

distance ratio: 10:1
Aperture: 20 mm
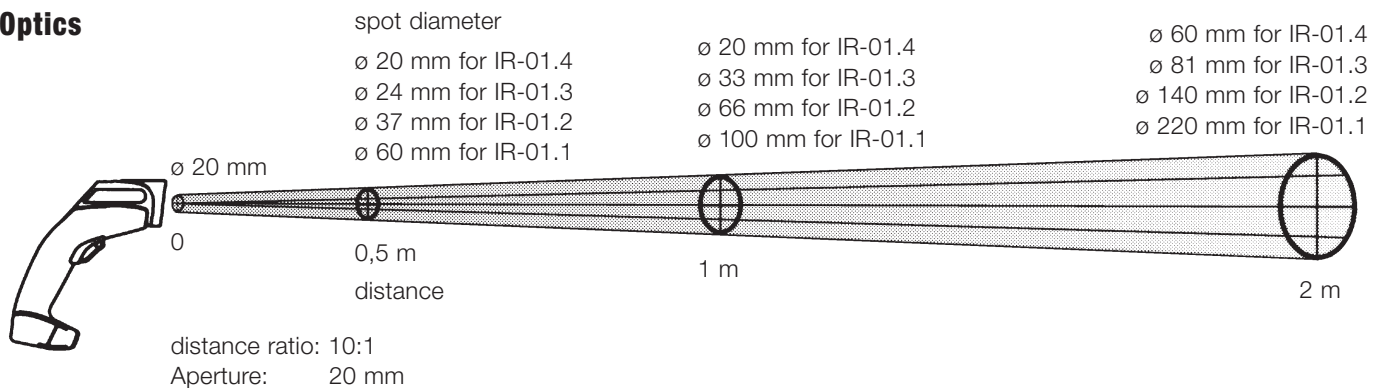
Ordering codes

Ordering number:	**IR-01.**	**1.**
Infrared Hand-Held Thermometer		
Version		
1 = operating range -32°C…+400°C, emissivity can be adjusted		
2 = operating range -32°C…+500°C, emissivity can be adjusted		
3 = operating range -32°C…+600°C, emissivity can be adjusted		
4 = operating range -32°C…+800°C, emissivity can be adjusted		