Cat.No.8260-00

Laser Marker Infrared Thermometer Model SK-8700

Model

SK-8700

Model SK-8700 is the best selling handy type infrared thermometer with the measuring range of -20 to 420°C. The laser marker helps you to aim the target at measurement.

All objects emit infrared energy. The hotter an object is, the more active its molecules are, and the more infrared energy it emits. An infrared thermometer houses optics that collect the radiant infrared energy from the object and focuses it onto a detector. The detector converts the energy into an electrical signal, which is amplified and displayed.

Use SK-8700 with fixed emissivity (0.95) to measure surface temperature of many materials such as asphalt, most ceramics, and highly oxidized metals. The feature of laser sighting helps you to increase your aiming accuracy.

APPLICATIONS

- Food Preparation
- Food Testing & Measurement
- Automobile
- Chemical and Petroleum
- Electronics
- Heating & Air Conditioning
- Plastics
- Textiles
- Road construction

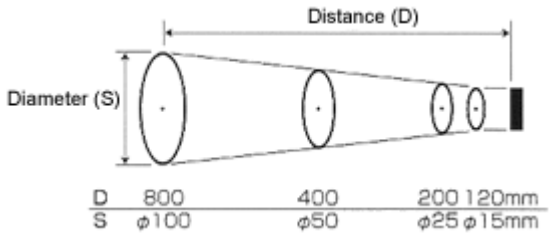
Specifications

Model	SK-8700	
Measuring range	-20°C to 420°C (0 to 786°F)	
Accuracy	± 2°C at -20°C to 100°C	
	± 2% Reading at other range	
	(conditions)	Ambient temperature at 23°C ± 5°C calibrated by black body emissivity at 0.95
Resolution	1°C / 1°F	
Repeatability	±1°C / ± 1°F	
Emissivity (*1)	Fixed at 0.95	
Distance to spot ratio (*2)	8 : 1	
Sensor	Thermopile	
Spectral response (*3)	6 to 14μm	
Response time	0.5 second	
Laser sighting	1 point, Class II Laser (use less than 1mW of power)	
Operating ambient	0 to 50°C for temperature less than 80% for R. humidity (no condensing)	
Storage ambient	-20 to 55°C for temperature less than 90% for R. humidity (no condensing)	
Power requirement	9V battery x 1 (included)	
Power consumption	Max. 40mA (when Laser and Backlight ON)	
Battery Life	approx. 5 hours (Laser & Backlight ON) approx. 10 hours (Laser ON & Backlight OFF) approx. 12 hours (Laser OFF & Backlight ON)	

	approx. 50 hours (Laser & Backlight OFF)
Functions	°C/°F selectable Backlight ON/OFF Laser marker ON/OFF Auto power off
Dimensions	(W) 41.5 x (D) 65 x (H) 160 mm
Weight	approx. 140 g (with battery)

(*1) Emissivity:
An object's ability to emit or absorb energy. Perfect emitters have an emissivity of 1. An object with emissivity of 0.8 absorbs 80% and reflects 20% of the incidental energy. Emissivity may vary with temperature and spectral response (wavelength).

(*2) Distance to spot size ratio (D:S)
The infrared thermometer focuses infrared energy form an object onto its detector at the rate. 8:1 distance to spot ratio means that the infrared thermometer will read 10cm diameter area 80cm away. For higher accuracy, make sure the area of the object is at least twice as large as the spot being measured

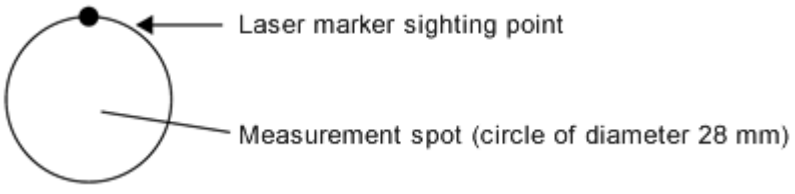


(*3) Spectral Response:
The specific wavelength region where an infrared thermometer responds (in the 0.7 to 20μm band of the electromagnetic spectrum). Instrument response is dependent on the emissivity, reflectance, and the transmission of infrared energy. A spectral response in the range of 8 to 14μm is good for general use.

Positional relation between distance and sighting point

This is a one-point laser sighting thermometer. The laser mark is sighted approximately 14 mm above the center of the spot.

(When the distance is approximately 225 mm)



When the measurement distance is approximately 225 mm, the laser marker is output aiming at the point illustrated above. Refer to the figure as a guide.

Emissivity Chart of Common Materials

Material	Emissivity
Asphalt	0.93 to 0.95
Ceramics and brick	0.80 to 0.95
Cloth	0.95
Concrete	0.94 to 0.95
Glass	0.76 to 0.85
Painted surfaces	0.74 to 0.96
Paper	0.50 to 0.95
Rubber	0.95
Sand	0.90
Snow	0.82 to 0.89
Soil	0.90 to 0.98
Steel, iron, oxidized	0.65 to 0.95
Steel, stainless steel	0.10 to 0.80
Water	0.93
Wood	0.89 to 0.94