KM812, KM814 AND KM814FS INFRATRACE COMPACT NONCONTACT THERMOMETERS

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CE CERTIFICATION

This instrument conforms to the following standards:

• EN50081-1:1992, Electromagnetic Emissions

• EN50082-1:1992, Electromagnetic Susceptibility

Tests were conducted using a frequency range of 27–500 MHz with the instrument in three orientations. The average error for the three orientations is ±4.8°C (±8.6°F) at 3 V/m throughout the spectrum. However, between 190 MHz and 500 MHz at 3 V/m, the instrument may not meet its stated accuracy.

WARRANTY

All Comark instruments have a minimum one year warranty unless otherwise stated. The warranty period for temperature probes is for six months and all other probes and electrodes are unwarranted because the conditions of use are beyond our control.

The Comark warranty covers manufacturing defects and component failure and applies worldwide. The warranty does not affect your statutory rights. In line with our policy of continuous development we reserve the right to alter any product specifications without notice.

EMISSIVITY

Most organic materials and painted or oxidized surfaces have an emissivity of 0.95 (pre-set in the unit) NOTE: KM814FS pre-set at 0.97. Inaccurate readings will result from measuring shiny or polished metal surfaces. To compensate, cover the surface to be measured with masking tape or matt black paint. Allow time for the tape to reach the same temperature as the the material underneath it. Measure the temperature of the tape or painted surface.

MAINTENANCE

Lens Cleaning: Blow off loose particles using clean compressed air. Gently brush remaining debris away with a camel hair brush. Carefully wipe the surface with a moist cotton swab. The swab may be moistened with water.
NOTE: **DO NOT** use solvents to clean the plastic lens.
Case Cleaning: Use soap and water on a damp sponge or soft cloth.
NOTE: **DO NOT** submerge the unit in water

TROUBLESHOOTING

CODE	PROBLEM	ACTION
– – – (on display)	Target temperature is over or under range	Select target within specifications
Battery icon appears	Possible low battery	Check and/or replace battery
Blank display	Possible dead battery	Check and/or replace battery
Laser doesn't work	Low or dead battery	Replace battery

HOW TO MEASURE TEMPERATURE ACCURATELY

LOCATING A HOT SPOT

To find a hot spot aim the thermometer outside the area of interest, then scan across with an up and down motion until you locate the hot spot.

FIELD OF VIEW

Make sure that the target is larger than the unit's spot size. The smaller the target, the closer you should be to it. When accuracy is critical, make sure the target is at least twice as large as the spot size.

DISTANCE & SPOT SIZE

As the distance from the object increases, the spot size of the area measured by the unit becomes larger.

REMINDERS

- Not recommended for use in measuring shiny or polished metal surfaces (stainless steel, aluminium, etc.). See Emissivity.
- The unit cannot measure through transparent surfaces such as glass. It will measure the surface temperature of the glass instead.
- Steam, dust, smoke, etc., can prevent accurate measurement by obstructing the units optics.

SPECIFICATIONS

Temperature Range **KM812 and KM814** **KM814FS**	-18°C to +260°C (0°F to +500°F) -30°C to +200°C (-25°F to +400°F)
Temperature display	0.5°C or 1.0°F
Accuracy (assumes ambient operating temperature of 23°C [73°F])	KM812/KM814 for targets at: -1°C to +260°C (+30°F to +500°F): ±2% of reading or ±2°C (±3.5°F), whichever is greater -18°C to -1°C (0°F to +30°F) ±3°C (±5°F) KM814FS for targets at: 0°C to 65°C (+32°F to +150°F):±1°C (±2°F) below 0°C (+32°F): ±1°C +0.1°C/°C (±2°F +0.2°F/°F) above +65°C (+150°F): 1.5% of reading
Response time	500 mSec, 95% response
Spectral response **KM812/KM814** **KM814FS**	7–18 µm 8–14 µm
Emissivity **KM812/KM814** **KM814FS**	pre-set 0.95 pre-set 0.97
Ambient operating range	0°C to +50°C (+32°F to +120°F)
Relative humidity	10–95% RH noncondensing, @ up to +30°C (+86°F)
Storage temperature	+20°C to +65°C (-4°F to +150°F) without battery
Weight / dimensions	227 g (0.5 lb); 152 x 101 x 38 mm (6 x 4 x 1.5 in)
Power	9V Alkaline battery
Typical battery life **(Alkaline)**	Non-laser models: 22 hrs Laser Models: 12 hrs
Distance to spot size **KM812/KM814** **KM814FS**	6:1 4:1

Specifications subject to change without notice.

Figure 1

WARNING

(units with laser sighting)

DO NOT POINT LASER DIRECTLY AT EYE OR INDIRECTLY OFF REFLECTIVE SURFACES.

CAUTIONS

ALL MODELS SHOULD BE PROTECTED FROM THE FOLLOWING,

- EMF (electro-magnetic fields) from arc welders, induction heaters
- Static electricity
- Thermal shock (caused by large or abrupt ambient temperature changes—allow 30 minutes for unit to stabilize before use)
- Do not leave the unit on or near objects of high temperature

INTRODUCTION

We are confident you will find many uses for your handheld noncontact thermometer. Compact, rugged, and easy to use—just aim, pull the trigger, and read current surface temperatures in less than a second.
You can safely measure surface temperatures of hot, hazardous, or hard-to-reach objects without contact.

HOW IT WORKS

Infrared thermometers measure the surface temperature of an object. The units optics sense emitted, reflected, and transmitted energy, which is collected and focused onto a detector. The units electronics translate the information into a temperature reading which is displayed on the unit. In units with a laser, the laser is used for aiming purposes only.

HOW TO OPERATE THE UNIT

°C/°F AND BATTERY

Pull open the unit's handle using the finger indents near the trigger to access the C/F switch or to insert/remove the battery. To toggle between °C and °F, push the switch (see fig 1). Insert the 9V battery positive side first into the battery compartment. NOTE: The battery door is detachable.

OPERATING THE UNIT

To measure a temperature, point unit at object and pull the trigger. Be sure to consider distance-to-spot size ratio and field of view. If the unit is equipped with a laser, use the laser only for aiming. See How to Accurately Measure Temperatures.

DISPLAY

The backlit LCD displays the current temperature in Celsius or Fahrenheit. The unit will hold the reading for 7 seconds after trigger is released; the word HOLD appears. The presence of the battery icon indicates a low battery.