



## AX-7510

### 1. Brief Introduction to the Product

The instrument is a professional handheld non-contact infrared thermometer, and is featured by convenient use, strict design, high measurement accuracy, broad temperature measurement range, etc. It has the functions like laser aiming, backlight LCD unit, over-temperature alarm, adjustable transmission rate, and automatic shutdown. When being used, the product can measure the temperature of objects quickly and accurately only with the probing window aiming at objects.

### 2. Basic Operating Principles

All objects whose temperature are higher than absolute zero degree will transmit a certain proportion of infrared radiation energy according to their own temperature. The size and wavelength-based distribution of radiation energy have very close relationship with its surface temperature. According to this theory, we may obtain the accurate temperature of a measured object by accurately measuring its infrared transmission energy.

### 3. Product Characteristics

- Backlight LED digital display
- Fahrenheit and Celsius modes are provided for choice
- Emissivity: 0.1~1.00 adjustable
- Built-in laser aiming device
- Automatic shutdown function (saving battery consumption)
- Small volume, reasonable structure, and convenient operation

### 4. Main Technical Indexes

- Normal work conditions:
  - 1.Ambient temperature: 10°C~30°C
  - 2.Storage temperature: -10°C~40°C





3.Relative humidity:  $\leq 90\%$

4.Power supply: One 9V battery (NEDA1604/6F22 or similar model)

- Basic size: 97mm×43mm×160mm (L×W×H)
- Weight (net weight): 125g (excluding battery)
- LCD resolution (precision): 0.1°C/°F
- Measuring range: -20°C~550°C(-4°F~1022°F)
- Power consumption:  $\leq 50\text{mW}$
- Measuring error:  $\pm 2.0^\circ\text{C}$  or  $\pm 2\%$  ( or  $\pm 3.0^\circ\text{C}$  at  $0^\circ\text{C}$ - $25^\circ\text{C}$ ), whichever is bigger
- Measuring time:  $\leq 0.5\text{s}$
- Measuring distance: D:S=12:1 (measuring distance is relative to object target; measuring condition: vacuum medium).
- Automatic shutdown time: 60s
- Safety design standard: Meeting European CE safety standard.

#### EMC/RFI

In the radio frequency electromagnetic field with strength of 3V/m, the reading will possibly be affected, but the instrument won't be affected eternally.

#### Note

In 3V/m and 350MHz~550MHz electromagnetic field , the maximum error is 8°C (46.4°F).

## 5. Application Method

- Safety clauses:
  1. The product shall be used carefully when the laser beam is opened
  2. Don't make the laser beam aim at the eyes of people or animals
  3. Don't make the laser beam reflected into people's eyes by aiming them at the surface of objects
  4. Don't make the laser beam aim at any explosive gas
- Measuring steps and methods:
  1. In order to obtain precise temperature value, the thermometer shall be used 10min after mounting of battery; if the product is moved to a new environment (new place), it shall also be used after 10min
  2. After the detection window is made aiming at the measured object, and the measuring key on the handle is moved, the thermometer will be started automatically. When sending out the prompt sound "beep", the product will display the measured result

#### Note

Before measurement, the emissivity of the object to be measured shall be selected, and meanwhile, the measuring distance shall be adjusted according to the size of the object to be measured.





## 6. Keys and LCD Signs Description

Up - Functional Key: Press “EMITM” key to select the setting of emissivity, with the sign “<UP>,<DOWN>” displayed simultaneously; press “up” key for upward adjustment; keep pressing the measuring key, and then press “up” key to turn on and off backlight. then press “up” and press test key to trigger “up” key for turning on and off backlight.

Down - Functional Key: Press “EMITM” key to select the setting of emissivity, with the sign “<UP>,<DOWN>” displayed simultaneously; press “down” key for downward adjustment; keep pressing the measuring key, and then press “down” to turn on and off infrared laser light.

Select - Functional key: Press the key circularly to select maximum value (MAX), average value (AVG), minimum value (MIN), the difference between the maximum value and minimum value (DIF), data hold (HOLD), low temperature alarm (LAL), high temperature alarm (HAL), zero offset adjustment (offset), and emissivity setting (E).


EMITM - Press “EMITM” key to select the setting of emissivity, with the sign “<UP>,<DOWN>” displayed simultaneously; and trigger “up” and “down” to adjust the emissivity.

Down - Press this key to select the conversion of Cels degree and Fahrenheit degree.

°C - Temperature unit: Celsius degree

°F - Temperature unit: Fahrenheit degree

- Auditory tone cues

- The appearance of the sign “” indicates over low battery voltage.

- The appearance of the sign “HR” indicates over-high ambient temperature

## 7. Storage and Cleaning

- Protective lens of probe are the most easily damaged part of infrared thermometer, and so must be protected carefully
- The method for cleaning the lens of probe: The lens shall be wiped gently with cotton swab or soft fabric soaked with water or alcohol
- The battery shall not be charged or thrown into fire, but instead, used batteries shall be discarded at specified recycling place; using disqualified battery will possibly induce fire or explosion
- Caution: The battery shall be taken out if the product is left unused for long term
- The product shall not be soaked in water or exposed to direct sunshine
- Do not hurtle down or impact the product heavily, or it will be damaged
- Failing to use the product according to effective distance or make it aim at the central location measured will possibly induce the deviation in the measured result, and in such case, it's suggested to measure the object once again or for more times





## 8. List of Accessories

- 1) One copy of manual

## 9. Attached List: Contrast List of Emissivity of Common Objects

Material name - Specification - Emissivity -

Aluminum - Oxidized - 0.20-0.40

Aluminum - Polished - 0.02-0.04

Human skin - - 0.98

Graphite - Oxidized - 0.20-0.60

Copper - Oxidized - 0.40-0.80

Copper - Polished - 0.02-0.05

Plastic - Transparency>0.5mm - 0.95

Gold - - 0.01-0.10

Rubber - - 0.95

Iron - Oxidized - 0.60-0.90

Plastic - - 0.85-0.95

Steel - Oxidized - 0.70-0.90

Concrete - - 0.95

Asbestos - - 0.95

Cement - - 0.96

Gyp - - 0.80-0.90

Soil - - 0.90-0.98

Asphalt - - 0.95

Mortar - - 0.89-0.91

Pottery - - 0.95

Brick - - 0.93-0.96

Wood - - 0.90-0.95

Marble - - 0.94

Charcoal Powder - - 0.96

Textile - - 0.90

Lacquer - - 0.80-0.95

Lacquerware - Lack of luster - 0.97

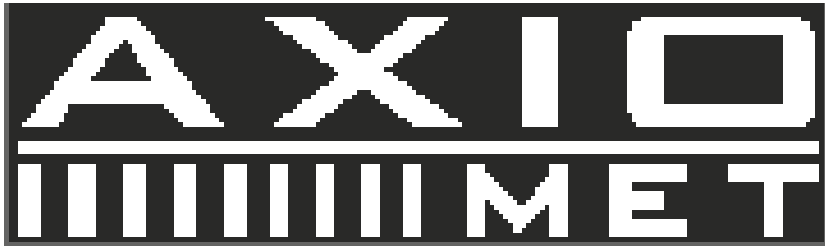
Paper - Various colors - 0.94

Carbon cement - - 0.90

Sand - - 0.90

Soap bubble - - 0.75-0.80





Clay - - 0.92-0.96  
Water 0.93 Grit 0.95  
Snow 0.83-0.90  
Glass - Tableware - 0.85-0.92  
Ice - - 0.96-0.98  
Textile - - 0.95

