

IR THERMOMETER METER VA6530A



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1. Safety Information

- Please read the following information carefully before using the meter.

- Safety symbols:-

 Danger/Important Information prompt.

 Comply with CE safety standards.

This instrument is compatible with the following standards:

EN61326-1

EN61010-1

EN60825-1

Warning!



Do not point laser directly at eye or indirectly off reflective surfaces.

2. Precautions

- After abrupt ambient temperature changes, allow instrument temperature to stabilize for 30 minutes before using for measurement.

- Avoid operating near strong electromagnetic fields such as arc welders, induction furnaces, etc.
- Do not expose thermometer to excessive ambient temperatures.
- Keep the thermometer clean and avoid getting dust into the detector's optics.
- Do not use solvents to clean the meter.

3. Feature Locations



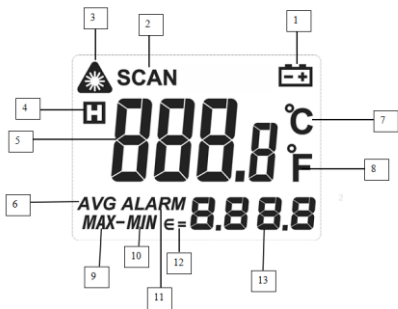
1. Sighting Groove
2. Laser orifice
3. Detector orifice
4. Tripod nut
5. Trigger
6. Battery cover



7. LCD
8. Laser button
9. Emissivity and Alarm temperature reduction button
10. Mode button

- 11. Emissivity and Alarm temperature addition button
- 12. Backlight button
- 13. °C/°F button

4. LCD illustration



- 1.Low battery detector symbol
- 2.Scan indicator.
- 3.Laser indicator
- 4.Hold indicator

- 5. Main Display (Display object temperature, AVG, MAX, MIN, MAX-MIN)
- 6. Average value indicator.
- 7. °C temperature unit
- 8. °F temperature unit
- 9. MAX indicator.
- 10. MIN indicator.
- 11. Alarm indicator.
- 12. Emissivity indicator.
- 13. Sub display (Display set emissivity)

5. Measurement Principle

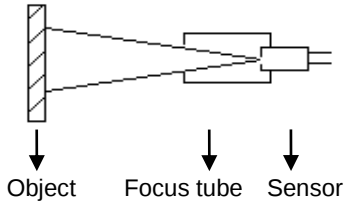
Infrared thermometers detect infrared energy emitted by objects. The instrument focuses energy through its lens, changing the temperature of a special material that creates an electrical signal. A microcomputer processes this signal and displays the output on the panel of the thermometer. The laser is used only for sighting the instrument and has no other effect on temperature measurement.

6. Measurement Method

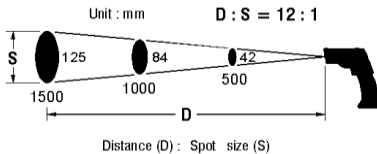
To measure the temperature of an object, aim the unit at the object and press the trigger. As long as you hold the trigger, you can measure temperature continuously. After releasing the trigger, the LCD will hold the temperature values. The main display is measurement display. It indicates the current temperature at set emissivity, AVG, MAX, MIN, MAX-MIN. The sub-display is setting display. In measurement mode it indicates the set emissivity, while in setting mode it is used to set emissivity and alarm.

7. Distance to Spot Ratio

The thermometer has an optical angle and spot size as shown below.



The target should be larger than the unit's optical spot size. The distance to spot ratio for this thermometer is 12:1 (12mm spot at 1meter) as shown below.



8. Emissivity

Emissivity is a term used to describe the energy emitting characteristics of a material. The higher the emissivity value a material has, the more

infrared energy it will emit at a particular temperature. Most organic materials range in emissivity between 0.85 and 0.98. This thermometer has adjustable emissivity from 0.1 to 1.00.

The attached sheet is the emissivity of different substances at normal temperature.

Substance	Emissivity	Substance	Emissivity
Asphaltum	0.90 - 0.98	Plastic	0.8 – 0.95
Concrete	0.70 – 0.75	Plastic film	0.5 – 0.95
Sand	0.8 – 0.9	Ceramic glaze	0.85 – 0.95
Soil	0.85 – 0.96	Marble	0.90 – 0.94
Water	0.92 – 0.98	Quartz	0.90
Ice	0.96 – 0.98	Aluminium (oxidized)	0.7 – 0.8
Snow	0.83	Copper(oxidized)	0.7 – 0.8
Glass	0.9 – 0.95	Iron (oxidized)	0.78 – 0.82
Keramics	0.9 – 0.94	Lead (oxidized)	0.3
Gypsum	0.89 – 0.91	Zinc	0.1

		(oxidized)	
Red brick	0.75 – 0.90	Zincified iron	0.3
Drygoods	0.93 – 0.98	Cast iron (polished)	0.2
Charcoal	0.96	Iron plate (oxidized)	0.75 – 0.82
Hominine skin	0.98	Steel plate (oxidized)	0.8 – 0.9
Leather	0.75 – 0.80	Stainless steel (Polished)	0.1
Paper	0.8 – 0.94	Gold (polished)	0.1
Lignum	0.8 – 0.9	Silver (polished)	0.1
Asbestos	0.95	Copper(polish ed)	0.1
Paint	0.9 – 0.98	Aluminium (polished)	0.1

9. Key Description.

A)Trigger /Power Key:

- In the **OFF** state, press this **Trigger** briefly to turn on the power.

- In the **ON** state, to measure the temperature of an object, aim the unit at the object and press the trigger. As long as you hold the trigger, you can measure temperature continuously

B) Backlight Key:

- Short press the key to turn **ON/OFF** the backlight.
- Long press the key to turn **ON/OFF** the alarm buzzer.

C) °C/°F switch button: Short press key to the conversion between Celsius and Fahrenheit.

D) Laser Button: Short press the key to turn **ON/OFF** the laser .

E) MODE key (Display mode):

Short press to switch between 4 display modes: , "AVG (average value)," "MAX," "MIN," "MAX-MIN," .

AVG: The average measurement value displayed on main LCD Display.

MAX: The maximum value of the measurement data is displayed on main LCD Display.

MIN : The minimum value of the measurement data is displayed on main LCD Display.

MAX-MIN: The difference between the maximum and minimum values of the measured data is display on main LCD Display.

F) ("+" and ("-") Key:

- Press ("+") key for increment operation.
- Press ("-") key for decrement operation.

10. Setting Modes

Keep press MODE key 3 sec to enter setting mode, short press MODE key to switch to Emissivity Setting Mode or Alarm Setting Mode. Keep press MODE key 3 sec again to escape setting mode.

A) Emissivity Setting Mode:

- The symbol of Emissivity i.e "€=" flash on LCD .Sub-display shows current set Emissivity.
- short press the "+" and "-" buttons can be used to set or adjust the emissivity value.
- The emissivity setting value can be adjusted between 0.1~1.00 ,
- To save Emissivity value or exit then again long press a **MODE** key. The symbol "€=" stop flashing.

B) Alarm Setting Mode:

- The symbol of alarm i.e “**Alarm**” flash on LCD .Main-display shows current set alarm temperature.
- Default alarm temperature is 60.
- In Alarm mode, the set alarm temperature is displayed on main LCD Display.
- short press the "+" and "-" buttons can be used to set or adjust the alarm value.
- The alarm setting temperature can be adjusted between 30~53.5 °C.
- To save alarm value or exit from Alarm-setting mode then again long press a **MODE** key.
- When the measured temperature is higher than the set temperature, the buzzer alarm will be triggered.
- Keep press Backlight key 3sec will disable/enable buzzer alarm function.

- If alarm symbol appear on LCD that means Buzzer is enabled and vice-versa

11) Hi/Lo Temperature : When Temperature is lower than $-40\text{ }^{\circ}\text{C}$, it displays "**Lo**" , when it is higher than $537\text{ }^{\circ}\text{C}$, it displays "**Hi**". The range, and the buzzer beeps 5 times rapidly .

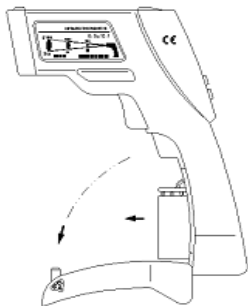
12) AUTO POWER OFF: If no key operation is performed, Then meter automatic shutdown after 10 seconds.

* Keep press Laser key and trigger to turn on meter, auto power off function will be disable and continue measurement until trigger again to turn off meter.

13. Changing the Battery

When the battery voltage drop below proper operation range the  symbol will appear on

the LCD display. The battery should be replaced soon after this occurs. Pinch the “OPEN” characters to swing the battery cover open as shown:



14. Specifications

1. LCD Display: 2-Display, 4 Digits
2. Distance to Spot Ratio: 12:1
3. Emissivity: adjustable 0.1 to 1
4. Spectral Response: 8-14 μ m
5. Measurement Range:

-40°C ~ 537°C or -40°F ~ 995°F

6. Accuracy: -40°C ~ 537°C ±
(reading×1%+2°C)
7. Response Time: 1.5 seconds
8. Laser Power: Less than 1 mW
9. Auto-off: After 10 seconds
10. Backlight: Kelly
11. Operating Environment: -10°C~ 50°C,
10~90%RH
12. Storage Environment: -10°C ~ 60°C,
<75%RH
13. Battery: 9Volt, 6F22
14. Size: 162mm long, 56mm wide, 190mm
high

Accessories:

9V battery, operation manual, carrying bag.



WLS298

