

**1 YEAR**  
WARRANTY



# User's Guide



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**CAUTION!** - This product is not intended for medical use or use on humans

# OS542 Infrared Thermometer

## WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

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## RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. **BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS).** The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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## I. SAFETY INFORMATION

- Read the following safety information carefully before attempting to operate or service the meter.
- Only qualified personnel should perform repairs or servicing not covered in this manual.
- Periodically wipe the case with a dry cloth. Do not use abrasives or solvents on this instrument.
- Safety symbols:



Dangerous, refer to this manual before using the meter.



Apply with European CE.

This instrument conforms to the following standards:

EN50081-1: 1992 Electromagnetic Emissions

EN50082-1: 1997 Electromagnetic Susceptibility

Test were conducted using a frequency range of 80-1000 MHz with the instrument in three orientations. The average error for the three orientations is  $\pm 2.0^{\circ}\text{C}$  ( $\pm 4.0^{\circ}\text{F}$ ) at 3V/m throughout the spectrum. However, between 300 MHz and 500 MHz at 3V/m, the instrument may not meet its stated accuracy.

### **Warning of laser!**

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

## II. CAUTIONS

Before using the infrared thermometer the operator must notice the following:

- Keep away from electrical welders, induction heaters and EMF sources.
- When using this thermometer under large or abrupt ambient temperature change, allow 15 minutes for unit to stabilize before use.
- Do not keep this thermometer in the environment of high temperature for a long time.
- Keep away from dusty environment, and keep in carry case after operation to avoid contamination of optical lenses.

### **III. GENERAL SPECIFICATION**

**Display:** 4 digit LCD

**Display Illumination:** Backlight by LED

**Field of View:** 8:1

**Target Indicator:** Laser spot

**Emissivity:** 0.98

**Power Off:** Automatic power-off after 10 seconds

**Temperature Range:** -20~500°C -4~932°F

**Accuracy:**  $\pm 2^{\circ}\text{C}$ (4°F) or  $\pm 2\%$  of reading

**Resolution:** 0.5°C / 0.5°F

**Repeatability:** Within  $\pm 1\%$  of reading or  $\pm 1^{\circ}\text{C}$ (2°F)

**Storage Condition:** -10~60°C, 14~140°F,  $\leq 75\%RH$

**Operating Condition:** 0~40°C, 32~104°F, 10~90%RH

**Response time:** 0.5 second

**Battery:** 9V battery, 006P, IEC6F22, NEDA1604

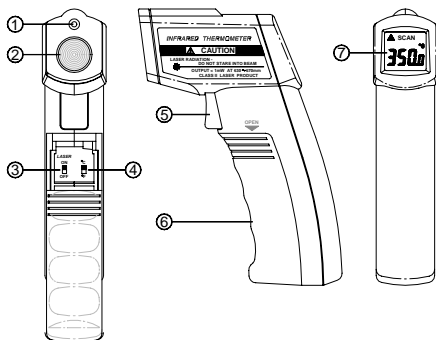
**Battery Life:** Approximately:15 hrs (Alkaline)

**Dimension:** 157.5x115x36mm, 17.5x4.5x1.4inch

**Weight:** 180g Approx.

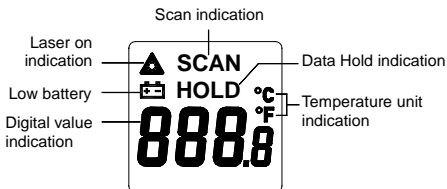
**Accessory:** 9V battery, instruction manual, carrying case

## IV. NAME AND FUNCTION



- |                       |                            |
|-----------------------|----------------------------|
| 1 Laser emitting hole | 2 Infrared sensor aperture |
| 3 Laser on/off switch | 4 °C/°F switch             |
| 5 Measuring Trigger   | 6 Battery cover            |
| 7 LCD display         |                            |

### LCD Display



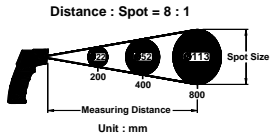
## V. OPERATION INSTRUCTIONS

- **Measuring Trigger**

To measure a temperature, point the unit at an object and pull the trigger. Be sure to consider distance-to-spot size ratio and field of view. The laser is used for aiming the target for reference. The temperature reading will be updated on the LCD. When the operator releases the trigger, the reading will automatically be held on the LCD for 10 more seconds. After 10 seconds this thermometer will power down itself to save battery.

- **Distance to Spot Ratio (D/S)**

You have to make sure that the detection area you want to measure is larger than the required spot size to get a correct reading. The temperature you get is an average temperature of the detected region. The smaller the target, the shorter distance is required for the measuring. (Please refer to the diagram on the side of the unit)



- **Emissivity**

Emissivity is a term used to describe the energy-emitting characteristics of materials. The higher of this value means the more capability of radiation emittance the materials has. Most organic materials and painted or oxidized surfaces have an emissivity of 0.98. Metal surfaces or shiny materials has a lower emissivity and


give inaccurate readings. Please note this during applications.

- **Maintenance**

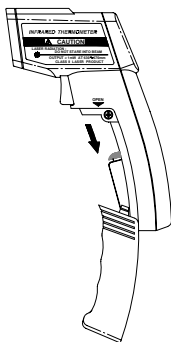
Blow off loose particles using a lens blow. Gently brush remaining debris away with a lens brush. Carefully wipe the surface with a moist cotton swab. The swab may be moistened with water.

**NOTE:** Don't use solvents to clean the lens.

- **Replace Battery**

When the battery voltage drops below that required for reliable operation, the low battery symbol  will appear, indicating it is the time to replace the battery.

To change the 9V battery, detach the battery compartment cover by pushing the engraved pattern on the handle and pull down. Change the 9V battery with new one and put the battery cover back.





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It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

**WARNING:** These products are not designed for use in, and should not be used for, human applications.

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