

TILSWALL W301

Tilswall Infrared Thermometer User Manual

Model: W301

1. INTRODUCTION

Thank you for choosing the Tilswall Infrared Thermometer, Model W301. This non-contact thermometer is designed for safe and accurate temperature measurement across a wide range of applications, from cooking and BBQ to industrial and automotive uses. It features a high-precision sensor, adjustable emissivity, and a clear LCD display for easy readings. Please read this manual thoroughly before use to ensure proper operation and safety.



Figure 1: Tilswall Infrared Thermometer and included batteries.

2. SAFETY INFORMATION

WARNING: This device is not intended for measuring human body temperature. It is designed for industrial, culinary, and general surface temperature measurements only.

Always observe the following safety precautions when using your infrared thermometer:

- Do not point the laser directly at eyes or indirectly off reflective surfaces. Laser radiation can cause eye damage.

- Do not use the device near explosive gas, steam, or dust.
- Do not immerse the unit in water or expose it to excessive moisture.
- Keep the device out of reach of children.
- If the device is damaged, do not operate it. Contact customer support.



Figure 2: Important warning - Not for human temperature measurement.

3. PRODUCT COMPONENTS

The Tilswall Infrared Thermometer package includes:

- Tilswall Infrared Thermometer (x1)
- AAA Batteries (x2)
- User Manual (x1)

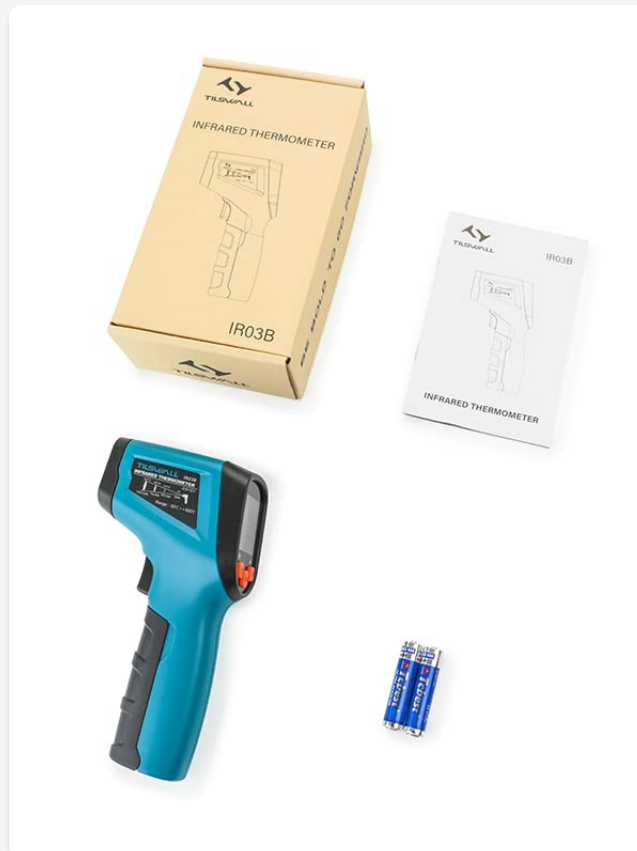


Figure 3: Package contents.

4. SETUP

4.1 Battery Installation

1. Locate the battery compartment on the handle of the thermometer.
2. Open the battery compartment cover.
3. Insert the two AAA batteries, ensuring correct polarity (+/-).
4. Close the battery compartment cover securely.

5. OPERATING INSTRUCTIONS

5.1 Taking a Measurement

1. Press the trigger to turn on the unit. The LCD display will illuminate.
2. Aim the laser pointer at the center of the target surface you wish to measure.
3. Pull and hold the trigger. The temperature reading will be displayed on the LCD.
4. Release the trigger to hold the reading on the display. The device will automatically turn off after 30 seconds of inactivity to conserve battery life.



Figure 4: Press and Aim for measurement.

5.2 Switching Temperature Units (°C/°F)

To switch between Celsius (°C) and Fahrenheit (°F), press the unit switch button (usually labeled °C/°F or indicated by an icon) on the device. The display will update accordingly.



Figure 5: Celsius/Fahrenheit unit selection.

5.3 Adjustable Emissivity (ε)

Emissivity is a measure of an object's ability to emit infrared energy. Different materials have different emissivities. For accurate readings, adjust the emissivity setting on your thermometer to match the material being measured. The adjustable emissivity range is 0.1 to 0.99.

1. Determine the emissivity of the object from the table below or a similar reference.
2. Press and hold the "MODE" button for 2 seconds to enter emissivity adjustment mode.
3. Use the "▲" (up) or "▼" (down) buttons to increase or decrease the emissivity value.

Emissivité réglable

Étape 1:
Déterminez l'émissivité de l'objet à mesurer dans le tableau ci-dessous.

Étape 2:
Appuyez sur le bouton "Mode" pendant 2 secondes pour régler l'état de l'appareil de mesure.

Étape 3:
appuyez sur le bouton "▲/▼" pour augmenter ou diminuer le niveau d'émission.

Surface mesurée		Éclat
Aluminium	Oxydé	0.2~0.4
	A3003 alliage (oxydé)	0.3
	A3003 alliage (grossier)	0.1~0.3
Laiton	Polissage	0.3
	Oxydé	0.5
Cuivre	Oxydé	0.4~0.8
	Bornier électrique	0.6
Hastelloy		0.3~0.8
Ferro-nickel	Oxydé	0.7~0.95
	Grenaillage abrasif	0.3~0.6
	Électropolissage	0.15

*Pour plus d'informations, veuillez consulter le manuel

Figure 6: Steps for adjusting emissivity and an example emissivity table.

Common Emissivity Values:

Material	Emissivity (ε)
Water	0.93
Ice	0.98
Painted Surfaces	0.90 - 0.98
Wood	0.90

Material	Emissivity (ϵ)
Concrete	0.95
Rubber	0.95
Asphalt	0.95
Human Skin	0.98
Polished Aluminum	0.05
Oxidized Aluminum	0.20 - 0.40
Polished Copper	0.03
Oxidized Copper	0.78
Stainless Steel	0.10 - 0.80



Figure 7: Examples of emissivity for various surfaces.

5.4 Distance-to-Spot Ratio (D:S)

The W301 has a D:S ratio of 12:1. This means that at a distance of 12 units from the target, the measurement spot diameter will be 1 unit. For example, if you are 12 inches away from the target, the measurement area will be a 1-inch circle. To ensure accurate readings, make sure the target area is larger than the spot size.



Figure 8: Distance-to-Spot Ratio (D:S).

5.5 Applications

The Tilswall Infrared Thermometer is suitable for a wide range of non-contact temperature measurement tasks:

- **Cooking and BBQ:** Quickly check the temperature of grills, ovens, and food surfaces (e.g., pizza stones, frying oil).
- **Home Maintenance:** Identify insulation issues, check HVAC vents, or monitor appliance temperatures.
- **Automotive:** Measure engine components, tires, or brake temperatures.
- **Industrial:** Monitor machinery, electrical panels, or manufacturing processes.



Figure 9: Various applications of the infrared thermometer.

6. MAINTENANCE

6.1 Cleaning

To clean the device, gently wipe it with a damp cloth. Do not use abrasive cleaners or immerse the device in water. Ensure the lens is clean and free of debris for accurate readings.

6.2 Battery Replacement

When the low battery indicator appears on the display, replace the AAA batteries as described in the Setup section (4.1 Battery Installation).

7. TROUBLESHOOTING

- **No Display/Unit Not Turning On:** Check battery installation and ensure batteries are not depleted. Replace if necessary.
- **Inaccurate Readings:**
 - Ensure the lens is clean.
 - Verify the emissivity setting matches the material being measured.
 - Ensure the target is within the effective distance-to-spot ratio.
 - Avoid measuring highly reflective surfaces directly; use matte tape if possible.
- **Laser Not Visible:** Check if the laser function is enabled (if applicable, refer to device buttons). Ensure the environment is not too bright.

8. SPECIFICATIONS

Feature	Specification
Model Number	W301
Temperature Range	-50°C to 600°C (-58°F to 1112°F)
Accuracy	±1.5% or ±1.5°C
Response Time	0.5 seconds
Distance-to-Spot Ratio (D:S)	12:1
Emissivity	Adjustable (0.1 to 0.99)
Power Supply	2 x AAA Batteries (included)
Auto-Off	30 seconds
Display Type	LED
Material	ABS
Dimensions (L x W x H)	9 x 5 x 17 cm
Weight	250 grams

9. WARRANTY AND SUPPORT

Tilswall products are manufactured to high-quality standards. For warranty information, technical support, or any questions regarding your Tilswall Infrared Thermometer, please contact our customer service team. Details can typically be found on the product packaging or the official Tilswall website. We are committed to providing excellent customer satisfaction and support.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question