

Digital Thermometer Manual

DT1 Version B



Document History

Revision	Date	CO	Supersession	Revision Description
I	25 NOV 2019*	15151	Supersedes A, B, C, D, E, F, G, H	Revised layout for consistency with Helmer manuals.

* Date submitted for Change Order review. Actual release date may vary.

Document Updates

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1 About this Manual

1.1 Intended Use

The Helmer DT1 solar-powered digital thermometer has been designed for use with the Helmer QuickThaw™ Plasma Thawing System.

1.2 Symbols Found in this Document

The following symbols are used in this manual to emphasize certain details for the user:



Task Indicates procedures which need to be followed.

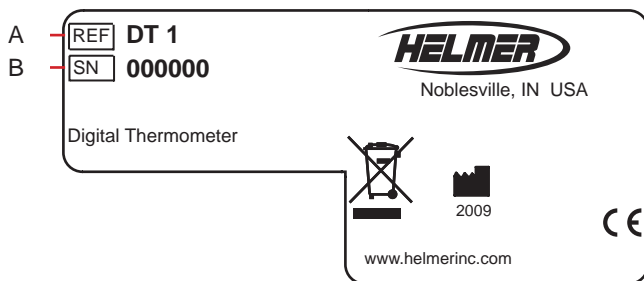


Note Provides useful information regarding a procedure or operating technique when using Helmer Scientific products.

1.3 General Recommendations

Recording Identification Information

For easy reference, write the model and serial number in the space provided on the front of this manual. Both the model and serial numbers are needed to provide efficient service.



Model: DT1
S/N: _____

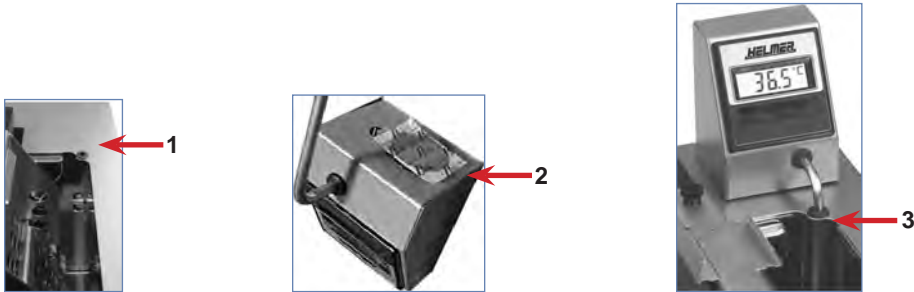
Product Specification label (sample)

Label	Description
A	Model
B	Serial number (S/N)

2 Installation

Note

In order for the hook and loop fastener to adhere, do not use a cleaner that will leave a slippery film on the surface.



Install digital thermometer

1. Clean the top section of your Helmer thawer using a cleaner suitable for stainless steel.
2. Peel the liner off the hook and loop fastener to expose the adhesive.
3. Carefully insert the probe of the digital thermometer through the holes in the brackets in the thawer. Align the digital thermometer as desired, then press it onto the surface of the thawer to adhere it in place.

3 General Operation

3.1 Using the Digital Thermometer

The stainless steel probe on the DT1 immerses in the water in the chamber, and the display shows the temperature in increments of 0.1 °C. For the display to work, there must be enough light in the work area (at least 35 Lux).

When the digital thermometer is first exposed to light, the message “---oE” is displayed for about 12 to 15 seconds while the thermometer initializes.

3.2 Calibration

Refer to the policy for your organization to determine how much variance is acceptable. If the variance is within acceptable limits for your organization, you may not need to change the setting.

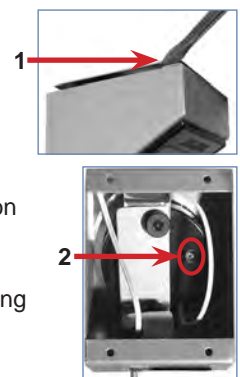
You must have a thermometer to complete this procedure. The thermometer must be independent of the digital thermometer, and be calibrated and traceable according to the policy of the National Institute of Standards and Technology (NIST), or to the equivalent national or international measuring equipment standards as identified in regulations for your organization.

Measure water temperature

1. Place the independent thermometer in the water chamber so the tips of both thermometers are at the same depth.
2. Allow the temperature readings to stabilize.
3. Compare the reading of the digital thermometer to that of the independent thermometer. If the difference is greater than the acceptable tolerance for your organization, calibrate the digital thermometer.

Calibrate digital thermometer

1. Using a flat-head screwdriver pry the back cover of the digital thermometer off the back plate off the housing.
2. Using a flat-head screwdriver, slightly turn the calibration adjustment dial accordingly to change the readout value.
3. Allow the temperature readings to stabilize for 15 to 30 seconds. This will also allow the calibration changes to take effect.
4. Repeat steps 2 and 3 as necessary until the readout is acceptable.
5. Install the back cover by aligning the mounting buttons with the holes on the housing, then pressing the buttons into the holes.



3.3 Removing the Digital Thermometer

To remove the digital thermometer, carefully lift up on the housing to separate the hook and loop fastener, and pull upwards.

4 Maintenance

4.1 Cleaning the Digital Thermometer

Notes

- Follow all chemical handling and disposal requirements and procedures specified by your organization.
- Use specific cleansers and cleaning supplies specified by your organization.

Clean and disinfect the digital thermometer regularly as necessary.

Clean the housing with a soft cloth and a non-abrasive liquid cleaner. Clean the stainless steel probe with a general-purpose laboratory cleaner suitable for stainless steel. Disinfect using a mild disinfectant solution.

5 Troubleshooting

Problem	Possible Cause	Action
The temperature is not displaying.	There is not enough light in the work area to power the digital thermometer.	Confirm that the light level in the room is at least 35 lux. Increase the light if necessary.
The temperature does not seem accurate.	The digital thermometer is not calibrated.	Verify the temperature with an independent thermometer and calibrate the digital thermometer if necessary.

6 Product Specifications

Power

Solar (minimum illuminance of 35 lux)

Weight

2.2 lb (1 kg)

Size

Width: 3.25 in (8 cm)

Height: 12.25 in (31 cm)

Depth: 4 in (10 cm)

Operating conditions

Ambient temperature range: 5 °C to 35 °C

Temperature detection range: -50 °C to 70 °C

Accuracy: ± 1 °C

7 References and Compliance

7.1 Safety Compliance



This device complies with the requirements of the RoHS Directive 2002/95/CE.

This product is certified to applicable UL and CSA standards by a NRTL.

7.2 Environmental Compliance



This device falls under the scope of Directive 2102/19/EU Waste Electrical and Electronic Equipment (WEEE) .

When disposing of this product in countries affected by this directive:

- ◆ Do not dispose of this product as unsorted municipal waste.
- ◆ Collect this product separately.
- ◆ Use the collection and return systems available locally.

For more information on the return, recovery, or recycling of this product, contact your local distributor.

8 Warranty

USA and Canada: The Helmer DT1 is warranted for one (1) year for materials and labor at our factory. Contact Helmer for details.

Outside of USA and Canada: Contact your local distributor for warranty information.

END OF MANUAL

