

Portable Non-Contact Thermometer Instruction Manual

THERMO-HUNTER PT-2L/PT-2LD

The 2L/LD Thermo-hunter is a non-contact thermometer that measures surface temperatures of objects by catching the infrared energy emitted by the target objects. Do not use to measure anything other than surface temperatures.

- Please check to make sure the model you purchased is the model you specified.
- Please read the manual before using the PT-2L/LD Thermohunter in order to use it correctly.
- After reading the manual, please be sure to keep it for future reference.



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"Take Care of the Environmet." This manual uses recycled paper.

Safe Usage

This instruction manual contains various warnings to ensure safe usage of the product and prevent damage and injury to you and other persons. Please be sure to heed the warnings and strictly follow safety procedures.

CAUTION This symbol signifies that improper usage may result in injury or damage.

- ⊘ This symbol signifies a prohibited action.
- Ⓢ This symbol signifies a required action.

CAUTION



Do not look into the laser beam, nor point it directly at eyes. Even the reflection is harmful. This laser may cause eye injury or damage to your health.

CAUTION



This product is not a clinical thermometer and therefore, cannot be used for medical purposes.

CAUTION



Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

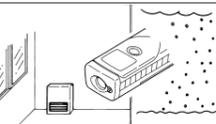
Environmental Condition to use



- ⊘ **KEEP THE THERMOMETER AWAY FROM DROPPING WATER AND DO NOT USE IN WATER.**
This thermometer is not water-proof.



- Ⓢ **KEEP THE THERMOMETER AWAY FROM DIRECT SUNLIGHT, DUST, HIGH TEMPERATURES AND HIGH HUMIDITY DURING USE AND STORAGE.**
Otherwise, the optical lens will become dirty or damaged. Such usage or storage will result in incorrect measurement.

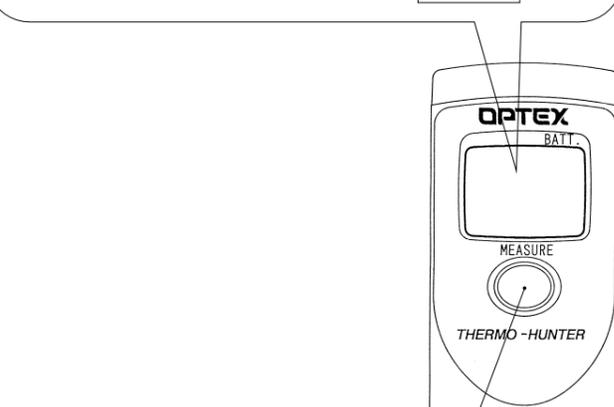
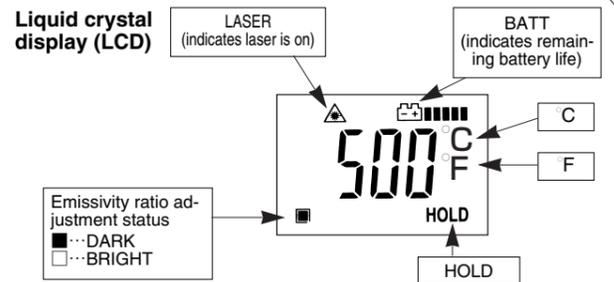


- Ⓢ **DO NOT APPLY SUDDEN TEMPERATURE CHANGES TO THE THERMOMETER.**
Sudden temperature changes may cause incorrect measuring results in such cases, leave the thermometer for a moment to let it return to a stable condition prior to the next measurement.



- Ⓢ **KEEP THE THERMOMETER AWAY FROM PRODUCTS WHICH PRODUCE STRONG ELECTROMAGNETIC WAVES.**
Usage in such environments will cause irreparable damages to the unit and incorrect measurements.

Operation instructions

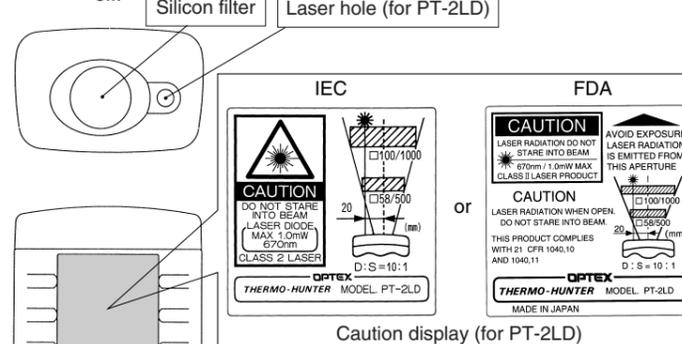


MEASURE button

- Push to operate and measure. It operates while pushing, and will automatically go off in 20 seconds after releasing the button.
- MEASURE button should be depressed to activate the laser beam and the release of pressure from button would shut off the laser beam. This function is provided instead of beam attenuator.

Operation instruction

- 1) Set two AA (SUM-3) batteries into the battery box which is located on the back of the thermometer.
- 2) Operates while pushing the MEASURE button. Laser sighting and Backlight is given by the same button. (PT-2LD only)
- 3) After releasing the button, the final measured value will appear on the display for 20 seconds before the thermometer automatically switches off.

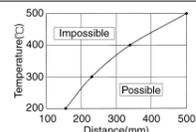


DIP switches

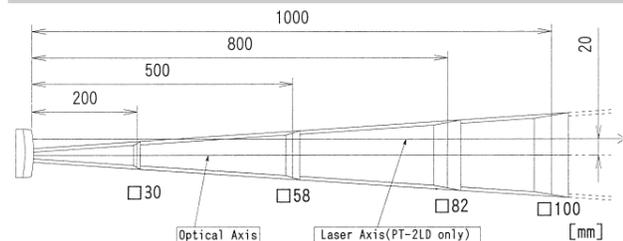
- ① °C/°F
Use this switch to change between the two different temperature systems.
 - ② DARK/BRIGHT (PT-2LD only)
Use this switch to adjust the emissivity ratio. Set this switch in accordance with the emissivity ratio of the object being measured.
DARK...Emissivity ratio is set to blackish objects (nominal 0.95)
BRIGHT...Emissivity ratio is set to whitish objects (nominal 0.70)
- The factory settings of the DIP switches are DARK and °C.
Change the DIP switch setting according to your measuring purpose.

Cautions on usage

- ⊘ **AVOID MEASURING SHINY OBJECTS.**
Shiny objects reflect surrounding temperatures. Although the emissivity rate of the unit can be adjusted to compensate for this problem, incorrect measurements will still result.
- ⊘ **DO NOT DROP THE THERMOMETER OR APPLY VIOLENT SHOCKS.**
Otherwise, irreparable damages or incorrect measurements will result.
- ⊘ **DO NOT USE WITH NON-STANDARD VOLTAGE.**
Otherwise, irreparable damages or incorrect measurement will result.
- ⊘ **DO NOT TOUCH TO THE OBJECT THAT IS BEING MEASURED.**
The unit is a non-contact thermometer. Touching the unit to objects with high temperatures will result in irreparable damages in the shape of the unit and incorrect measurements.
- ⊘ **DO NOT TOUCH THE FILTER.**
Hards off the filter otherwise measuring error might come.
- ⊘ **DO NOT USE NEAR OBJECTS ELECTRICALLY CHARGED.**
Otherwise, irreparable damages or incorrect measurements will result.
- ⊘ **A DISTANCE MUST BE TAKEN FOR MEASURING HIGH TEMPERATURE.**
Refer the chart left beside the heat might damage the filter to give wrong display.



Field of View



※Axis of the laser is located 20mm left from the optical axis.
The size of the object to be measured must be sufficiently bigger than the measuring area shown in the above illustration.

Trouble shooting

Problems	Cause	Solution
No readout	No battery or wrong setting of batteries.	Replace the batteries or set them again in the correct direction
Laser doesn't appear, it is dark	Dirt on the laser hole.	wipe to clean the hole.
	Insufficient battery for driving laser.	Replace the batteries or set them again in the correct direction.
The measured figure seems incorrect	Dirt on the filter.	Clean the filter referring to the maintenance clause of this manual.
	The target is not aligned to optical axis.	Make sure target size and distance referring Field of View chart.
	There is some object emitting high temperatures near the object to be measured	Cover such heat source.
The measured figure is not stable	The object has a lustrous metallic surface.	An error in reading is inevitable. Use another optex thermometer with variable emissivity system.
	The unit is affected by rapid environmental temperature changes	Leave the unit to get it familiar with surrounding temperature.

If the above solutions do not correct the problems, the thermometer might be defective. In this case, please contact your local dealer for service.

Maintenance

- Filter** Dust, dirt and scratches on the filter cause incorrect measurements. In case of dirty filter please remove the dust on the lens with a blower etc, for lens cleaning use.
- Main Unit** The main unit is made of ABS. When it becomes dirty, lightly wipe with a soft cloth which has been soaked in soapy neutral and then well wrung. Do not apply chemical solvents such as thinner, benzene and alcohol to remove them since these chemicals may cause erosion of the casing surface, or disappearance of printed characters.
- Check** We recommend that you check the calibration once a year. Please inquire at your local dealer for service.

Batteries

- 1) Battery box is located on the back of the thermometer.
- 2) Set the batteries into the battery box in the correct direction according to the polarity marks in the box.
Replace the batteries when the battery life indicator starts blinking.
Replace both batteries with new ones to avoid using old and new batteries together.

Caution

- 1) Do not throw used batteries into a fire. Do not recharge them.
- 2) Follow the local laws or regulations when disposing the batteries.
- 3) Take the batteries out of the thermometer when you do not use for a long time.

Reference

○ Emissivity ratio (ε)

The emissivity ratio is the rate of the energy emitted from the surface of the object. All objects possess a particular emissivity ratio which changes according to the object's surface conditions or temperature. Our thermometer allows the emissivity ratio to be set at a fixed rate, enabling the surface temperatures of the following objects to be almost precisely measured

- 0.95(DARK)...rubber, plastic, paper, food, painted surfaces, etc.
- 0.70(BRIGHT)...oxidized metallic surfaces, etc. can be measured correctly.

In the case of objects with different emissivity ratios than the objects listed above, deviation of measurement will occur. In such cases, take their figures as approximate values by placing our separately sold black tape (ε = 0.95) onto the object to be measured, the object can be almost precisely measured. (up to 150°C)

○ FCC statement (applicable in the U.S.)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Specifications

Model	PT-2L	PT-2LD
Measuring range	-40~510°C (-40~950°F)	
Display range	-51~538°C (-60~1000°F)	
Field of View	□100/1000mm (D: S=10:1) square spot	
Optics	mirror/silicon filter	
Sensing element/Wavelength	Thermopile/8~14 μm	
Response Time	800ms/90%	
Measuring Accuracy (ε=0.95, at 25°C±3°C)	Less than 0°C: ±3°C, 0~200°C: ±2°C 201°C~±1% of reading value (Less than 32°F: ±6°F, 32~400°F: ±4°F, 401°F~±1% of reading value)	
Repeatability	±1°C (2°F) of reading value	
Display Resolution	1°C (1°F)	
Sighting method	N/A	Blinking Laser marker
Emissivity	0.95	0.95/0.7 (Switchable)
Back-light function	N/A	Available
Temperature unit	°C/°F (Switchable)	
Battery type	AA×2pcs	
Battery life (Alkaline)	Appox.60hours	Appox.30hours
Operating temperature	0~50°C (32~120°F)	
Operating humidity	35~85%RH (Without dew condensation)	
Storage temperature	-10~60°C (14~140°F)	
Dimensions	H×W×D=140×56×37mm	
Weight (Incl. Battery)	175g	180g

Specifications are subject to change for product improvement without prior notice.