

# Infrared Thermometer TM0300

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## Instruction Manual



**Perfect  
Prime**

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## 1. SAFETY REGULATIONS

Aenon! This user manual is an essential part of this product. The user manual should be read carefully before you use the product for the first time. If the product is given to someone for temporary use, be sure to enclose user manual to it.

- Do not misuse the product.
- Do not remove warning signs and protect them from abrasion, because they contain information about safe operation of the product.



Laser radiation!  
Do not stare into beam Class 2 laser  
<1 mW 635-670nm  
EN60825-1: 2007-03

- Do not look into the laser beam or its reflection, with unprotected eye or through an optical instrument. Do not point the laser beam at people or animals without the need. You can dazzle them.
- To protect your eyes close them or look aside.
- Do not let unauthorized people enter the zone of product operation.
- Store the product beyond reach of children and unauthorized people.
- It is prohibited to disassemble or repair the product yourself. Entrust product repair to qualified personnel and use original spare parts only.
- Do not use the product in explosive environment, close to flammable materials.
- Avoid heating the batteries to avoid the risk of explosion and electrolyte leakage. In case of liquid contact with skin, wash it immediately with soap and water. In case of contact with eyes, flush with clean water during 10 minutes and consult the doctor.



## 2. FUNCTIONS/APPLICATIONS

IR-thermometer TMO300 is designed for non-contact measurement of surface temperature of various objects. Ergonomic, shockproof housing, small size and weight, intuitive interface, laser spot marking, continuous measurement mode provide simple and convenient measurement of temperature of dangerous, moving, hard-to-reach distant objects at less than 1 second at just one touch of the trigger.

The principle of non-contact temperature measurement is based on measuring of the intensity of infrared radiation of the object's surface.

### DELIVERY PACKAGE

Infrared thermometer – 1 pc.

Battery (1,5V LR6 AA) – 1 pc.

User manual – 1 pc.





### 3. TECHNICAL SPECIFICATIONS

<b>Display</b>	30*30mm LCD with backlight	
<b>Measuring range</b>	-50 °C ...600 °C -58 °F ...1112 °F	
<b>Accuracy</b>	-50 °C...-20 °C (-58 °F...-4 °F)	±3 °C (±6 °F)
	-20 °C...0 °C (-4 °F...32 °F)	±2 °C (±4 °F)
	0 °C...600 °C (32 °F...1112 °F)	±1,5 °C (±3 °F) or ±1,5%
<b>Smallest unit displayed</b>	0.1 °C/°F	
<b>Optical resolution</b>	12:1	
<b>Response time</b>	0,1 sec	
<b>Spectral sensitivity</b>	8...14 μm	
<b>Emissivity</b>	0.1...1.00 adjustable	
<b>Operating temperature</b>	0 °C ...50 °C (32 °F...122 °F)	
<b>Storage temperature</b>	-10°C...60°C (-14 °F...140 °F)	



### 3. TECHNICAL SPECIFICATIONS

<b>Relative humidity for operation and storage</b>	<95%
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<b>Power supply</b>	1,5V LR6 AA alkaline
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<b>Battery life</b>	~6 hours
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<b>Automatic Shutdown</b>	30 sec.
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<b>Laser</b>	Class II, 635-670nm, <1mW
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<b>Dimensions</b>	165*47*59mm
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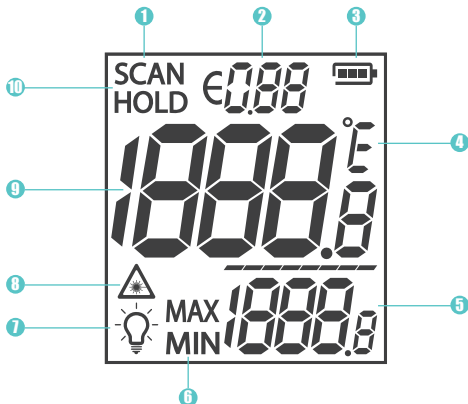
<b>Weight</b>	135 g
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## 4. PRODUCT DESCRIPTION



- ① Display
- ② Keyboard
- ③ Trigger
- ④ Laser spot marking exit window
- ⑤ Infrared sensor
- ⑥ Battery cover

## 4. PRODUCT DESCRIPTION



### Display

- ① Indication of continuous measurement
- ② Emissivity value
- ③ Indication of battery charge level
- ④ Measuring units (°C or °F)
- ⑤ Maximal/minimal measurement value
- ⑥ Indication of maximal/minimal value
- ⑦ Indication of display backlight
- ⑧ Indication of activated laser spot marking
- ⑨ Measurement result
- ⑩ Indication of data hold on the display



## 4. PRODUCT DESCRIPTION

### Keyboard



- Check max/min values/adjust emissivity degree.




- Switch on/off display backlight and laser spot marking.



- Select measuring unit (°C or °F)/adjust emissivity degree.

### INSTALL/REPLACE BATTERIES

Remove the battery cover. Install the battery observing correct polarity. Put the battery cover back and push it until a click is heard.

If the symbol of low battery change level  appears on the display, replace the battery by a new one.




### SWITCH ON/OFF

Short press the trigger to switch on the device. The device is ready to work. The device switches off automatically in 30 seconds after the last pressing on any button.

## 5. SETTINGS

### 1) Measuring units





Short press button  to select the measuring unit:

°C – degrees Celsius;

°F – degree Fahrenheit.



Short press button to select the measuring unit.



### 2) Laser spot marking

Short press button  to activate laser spot marking\*. Symbol  will appear on the display. To disable laser spot marking short press button  several times until symbol  disappears. Laser spot marking is only used for aiming and can be switched off when working at short distance to save battery power.

\*Laser spot marking is on as long as the trigger is pressed.

### 3) Display backlight

Short press button  to switch on display backlight. Symbol  will appear on the display.


To switch off the backlight short press button  several until backlight is switched off and symbol  disappears.



## 6. MEASUREMENT

Short press the trigger to switch on the device. Press corresponding buttons to set the measuring unit, activate laser sport marking, display backlight if needed.

Aim the device against the object of measurement and press the trigger. Measurement result will appear on the display.

Long press the trigger to activate continuous measurement. Indication **SCAN** will appear on the display. To finish continuous measurement release the trigger. Indication of data hold **HOLD** will appear on the display. Measurement result as well as the minimum/maximum value will also be displayed. Short press button  several times. The minimum and maximum values are displayed alternately on the display.

## 7. EMISSIVITY

All objects emit thermal energy. Emitted energy quantity depends on the surface temperature and object emissivity. The product can measure emission on the surface of object and calculate object temperature. Objects with different surfaces but with the same temperature can emit different quantity of thermal energy. Many objects (e.g. coated metal, wood, water, skin and texture) possess high emissivity (0,9 and more), and emit more energy than glossy surfaces and uncoated metal, because their emissivity is less than 0,6. Adjustment of emissivity helps to take this feature into consideration and minimize inaccuracy of temperature measurement.




Material	Emissivity	Material	Emissivity
Asphalt	0.90~0.98	Black cloth	0.98
Concrete	0.94	Human skin	0.98
Cement	0.96	Bubble	0.75~0.80
Sand	0.90	Charcoal dust	0.96
Soil	0.92~0.96	Paint	0.80~0.95
Water	0.92~0.96	Matte paint	0.97
Ice	0.96~0.98	Black rubber	0.94
Snow	0.83	Plastic	0.85~0.95
Glass	0.90~0.95	Wood	0.90
Ceramic	0.90~0.94	Paper	0.70~0.94
Marble	0.94	Chromic oxide	0.81
Gypsum	0.80~0.90	Copper oxide	0.78
Mortar	0.89~0.91	Ferric oxide	0.78~0.82
Brick	0.93~0.96	Texture	0.90





## 8. SWITCH ON THE DEVICE / 9. OPTICAL RESOLUTION / 10. CARE AND MAINTENANCE

### Switch on the device.

Press and hold the trigger, then long press button . Symbol  $\epsilon$  will start flashing on the display. Release the trigger. Value 0.95 is set by default. Press buttons  and  to adjust the emission degree will be fixed on the display, symbol  $\epsilon$  will stop flashing.

### OPTICAL RESOLUTION

As the distance from the device to the object increases, the size of the measured spot on object surface increases accordingly To determine the size of the spot (S) divide the distance from the device to the target (D) by 12.



### CARE AND MAINTENANCE

Attention! The product is an accurate optical mechanic device and requires careful handling. Maintenance of the following recommendations will extend the life of the device:

- Keep the product clean and protect it from any bumps, dust and dampness; do not allow moisture, dust or other dirt get inside of the product.
- Do not expose the product to extreme temperatures.
- If liquids get inside the product first remove the batteries, then contact a service center.
- Do not store or use the product under high humidity conditions for a long time.
- Clean the product with soft wet cloth.
- Keep the device optics clean and protect it from mechanical impact. Failure to observe the following rules may result in leakage of electrolyte from the batteries and damage the device.
- Remove the batteries from the product if you do not use it for a long time.
- Do not leave discharged batteries in the device.



## 10. UTILIZATION

Expired tools, accessories and package should be passed for waste recycle. Please send the product to the following address for proper recycle:



Do not throw the product in municipal waste! According to European directive 2002/96/EC expired measuring tools and their components must be collected separately and submitted to environmentally friendly recycle of wastes.



## 11. WARRANTY

All **PerfectPrime** products go through post-production control and are governed by the following warranty terms. The buyer's right to claim about defects and general provisions of the current legislation do not expire.

- **PerfectPrime** agrees to eliminate all defects in the product, discovered while warranty period, that represent the defect in material or workmanship in full volume and at its own expense.
- The warranty period is 24 months and starts from the date of purchase by the end customer (see the original supporting document).
- The warranty doesn't cover defects resulting from wear and tear or improper use, malfunction of the product caused by failure to observe the instructions of this user manual, untimely maintenance and service and insufficient care, the use of non-original accessories and spare parts. Modifications in design of the product relieve the seller from responsibility for warranty works. The warranty does not cover cosmetic damage, that doesn't hinder normal operation of the product.
- **PerfectPrime** reserves the right to decide on replacement or repair of the device.
- Other claims not mentioned above, are not covered by the warranty.
- After holding warranty works by **PerfectPrime** warranty period is not renewed or extended.

**PerfectPrime** is not liable for loss of profit or inconvenience associated with a defect of the device, rental cost of alternative equipment for the period of repair. In warranty case please return the product to retail seller or send it with description of defect to the following address:

cs@perfectprime.com

## CUSTOMER SERVICE INQUIRIES

Your emails are important to us so we strive to reply all inquiries and emails within **24 hours**. In exceptional cases, we may require more time to respond.

Thank you for your understanding.

For more information about our products and services, please send us an email:

**[cs@perfectprime.com](mailto:cs@perfectprime.com)**

For B2B or project-based application, please send an email:

**[sales@perfectprime.com](mailto:sales@perfectprime.com)**

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