VPD Thermometer

User Manual

VIVOSUN

Welcome to **VIVOSUN**

Thank you for choosing Vivosun! We are committed to making quality products and friendly customer service. If you have any questions or suggestions, please don't hesitate to contact us.

Safety Information

To avoid eye injury or personal harm, please read the following safety instructions carefully before use:

1. Do not direct the laser beam towards people, animals, or indirectly towards eyes through reflective surfaces.
2. Do not view the laser directly through optical instruments (e.g., binoculars, telescopes, or microscopes), as they may focus the beam and cause serious eye injury.
3. Replace the battery promptly when the low battery icon appears to maintain measurement accuracy.
4. Remove the battery if the thermometer will not be used for an extended period, or will be stored in environments exceeding 50°C, as this may cause battery leakage.
5. Ensure correct battery polarity to prevent battery leakage and potential device damage.
6. If battery leakage is detected, do not use the thermometer until it has been repaired to avoid the risk of electric shock or further damage.
7. Do not use the thermometer near explosive gases, vapors, or in humid environments.
8. Inspect the insulators and casing near the ports for cracks before use.
9. Refer to emissivity settings for accurate temperature readings—highly reflective surfaces may result in readings lower than the actual temperature.
10. To ensure measurement accuracy, allow the thermometer to acclimate to the current environment for at least 30 minutes before use.
11. Only authorized technicians are permitted to repair this thermometer.

Key Features
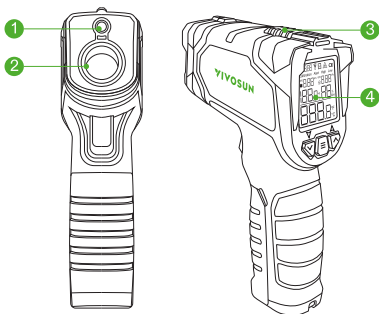
1. **13-Point Laser Positioning**
   Quickly lock onto the target measurement location.
2. **High-Precision Infrared Sensor**
   Accurately measures surface temperatures of objects, such as plant leaves, with a temperature range of -58 to 896°F.
3. **Measurement of Ambient Temperature and Humidity**
   Provides environmental VPD and plant leaf VPD, offering critical data to optimize the grow space.
4. **Infrared Temperature Alarm**
   Triggers a flashing red light alarm when the infrared temperature exceeds the preset upper or lower limits.

Product Contents

Thermometer

AAA Batteries (x2)

Storage Bag

Dimensions

Infrared Temperature Measurement Range	-58~896 °F -50~480°C
Infrared Temperature Measurement Accuracy	32~896°F: ±(1.5%+5°F) -58~32°F: ±5°F 0~480°C: ±(1.5%+1°C) -50~0°C: ±3°C
Response Time & Wavelength	<500 ms, 8 μm~14 μm
Distance-to-Spot Ratio (D:S)	12:1
Emissivity	Adjustable from 0.1 to 1.00 (Default Value: 0.98)
Laser Positioning	13-Point Circular Indicator, Wavelength: 650 nm, Output Power: <1 mW, Class 2 Laser
Ambient Temperature	-4~140°F ±2°F -20~60°C ±1°C
Ambient Humidity	1~99%RH ±4%

Dimensions

Auto Power Off	30 seconds
Display Size	1.14*1.06 inches (29*27 mm)
Power Supply	2x 1.5V AAA (R03/LR03)
Product Dimensions	6.1*3.62*1.65 inches (155*92*42 mm)
Product Weight	0.397lbs (180g)
Operating Temperature	32~122°F (0~50°C)
Storage Temperature	-4~140°F (-20~60°C)

Control Panel
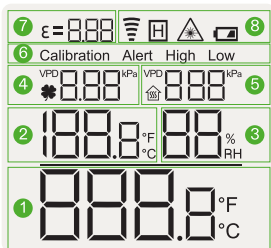
Control Panel

1. Infrared Temperature
Displays the current measured surface temperature of objects.

2. Ambient Temperature
Displays the current measured ambient temperature.

3. Ambient Humidity
Displays the current measured ambient humidity.

4. Leaf VPD
Displays the current measured VPD of the leaf, providing valuable information for plant growth monitoring.

5. Ambient VPD
Displays the current measured VPD of the environment.

6. Settings Menu
Displays the current setting mode, including Calibration and Alert.

7. Emissivity
Displays the current emissivity.

8. Status Icons
Indicates various statuses, such as: Detecting, Hold, Laser On, and Low Battery.

9. Trigger Button
Single Click: Powers on the device, detects readings and confirms settings.
Long Press: Continuously refresh readings.

10. Down Button
Single Click: Adjust the current setting value.
Long Press: Hold for 5 seconds to reset to factory default settings.

Control Panel

11. Setting Button
Single Click: On/Off Laser Indicator
Long Press: Cycle through the thermometer settings:
Emissivity Adjustment, Infrared Temperature Calibration,
Ambient Temperature Calibration, Ambient Humidity
Calibration, Alarm High Threshold Adjustment, and
Alarm Low Threshold Adjustment.

12. Up Button
Single Click: Adjust the current setting value.
Long Press: Switch between°C and °F.
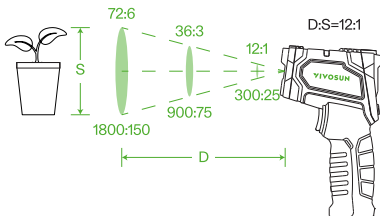
Operation

1. Emissivity Reference

Material	Emissivity	Material	Emissivity
Default	0.98	Leafy Plants	0.98
Asbestos	0.95	Iron	0.7
Asphalt	0.95	Lead	0.5
Brass	0.5	Oil	0.94
Ceramic	0.95	Paint	0.93
Concrete	0.95	Plastic	0.95
Copper	0.6	Rubber	0.95
Food (Frozen)	0.9	Sand	0.9
Food (Hot)	0.93	Steel	0.8
Wood	0.94	Water	0.93

Operation

2. Distance-to-Spot Ratio (D:S)

The Distance-to-Spot Ratio (D:S) is an optical specification for infrared thermometers. It defines the ratio of the distance (D) from the thermometer to the target and the effective area (S) of the target being measured. As the distance (D) increases, the measured spot size also increases.

This thermometer has a D:S ratio of 12:1, meaning it can measure a 1-inch diameter area from a distance of 12 inches. The greater the distance from the target, the larger the measurement area.
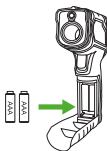

3. Powering and Operation

(1) Open the battery cover.
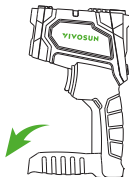
Operation

(2) Insert the AAA batteries
    according to the correct polarity
    and close the battery cover.

(3) Point your thermometer at the
    target and pull the trigger to
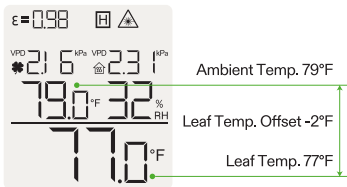   generate a reading.

4. Leaf Temp. Offset Reference*

Use the thermometer's climate readings to determine
your leaf temperature offset. This measurement ensures
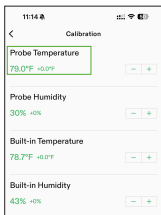precise leaf VPD readings from your SGS devices.

Leaf Temp Offset Formula
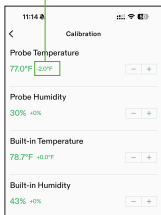Leaf Temp. - Ambient Temp. = Leaf Temp Offset

ε=0.98

VPD ❄ 21.6 kPa   VPD ⌂ 23.1 kPa

79.0°F   32%RH

77.0°F

Ambient Temp. 79°F

Leaf Temp. Offset -2°F

Leaf Temp. 77°F

*VPD and leaf temperature offset are relevant only in the
context of plant-related measurements.

Operation

Leaf Temp. Offset -2°F

Warranty

Vivosun offers a 1-year warranty against defects on all VPD Thermometer products purchased directly from us or through our authorized dealers. This warranty reflects our commitment to addressing any manufacturing defects or premature failures that occur under normal use.

The warranty covers replacement or refund for products that exhibit material defects within one year from the original purchase date. To initiate a claim, customers must provide proof of purchase to confirm eligibility.

This warranty does not cover products that have been misused, abused, or intentionally damaged. It also excludes normal wear and tear, as well as cosmetic imperfections such as minor scratches.

Customers can purchase with confidence, knowing our products undergo strict quality control. Our 1-year warranty underscores the trust we place in the durability and performance of our devices.

Made in China