

# Digital refractometer



## Introduction

Thank you for choosing our refractometer. This is an easy-to-use device, requiring little to no training. Please read the manual before using to ensure optimal measurement

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## Specifications

1. Temperature measurement range: 0°C-40°C (32°F-104°F) Measurement range: Please see table on the last page
2. Precision of measurement temperature:  $\pm 0.5^{\circ}\text{C}$  (1°F)
3. Automatic temperature compensation: 5°C-40°C (41°F-104°F)
4. Minimum sample volume: 0.3ml
5. Measuring response time:  $\leq 3$ seconds
6. Power supply: 2×AAA batteries
7. Battery life:  $\geq 5000$  readings
8. Dimension: 145×67×38mm ( L x W x H)
9. Net Weight: 185grams

### Auto temperature compensation(atc)

Refractive index is temperature-dependent. The refractometer is temperature-compensated for aqueous (water-based) sucrose solutions and can automatically compensate for temperature differences within the range of 0°C~40°C (32°F~104°F)

### Calibration-zero set

Please refer to the specification table for the calibration solution standard to different measurement items and ranges. The refractometer must be set zero before initial use and periodically thereafter. The temperature for calibration liquid (distilled water) and the instrument should ideally near 20°C (68°F)

1. Inspect the measuring surface to make sure it is clean and dry
2. Place a few drops of calibration liquids on the prism window
3. Pass ZERO button, start calibration at 20°C. If calibration is successful, it will show "Pass"
4. After calibration process is finished, the screen will be returned to temperature mode. The calibration result will be saved and will be the new zero point after the device is powered off and on again

## Measurement

1. Make sure the prism surface is clean and dry
2. Place a few drops of the sample on the prism
3. Press READ button, test results will be shown on the screen. The result(s) will be stored in the device for up to 60 seconds. Press POWER button to recheck the previous measurements
4. Clean the sample bath thoroughly after each measurement

## Scale selection

1. Hold READ button for 2 seconds, the scale will change to the next measurement type. Repeat until desired the scale is shown on the screen
2. The refractometer saves the last selected scale

## Temperature selection

1. Hold ZERO button for 2 seconds, the temperature unit will change between Celsius (°C) and Fahrenheit (°F)
2. The refractometer saves the last selected temperature unit





## Resetting

1. Press simultaneously the POWER and READ button, the option of returning to the factory settings will be displayed on the screen
2. Press ZERO button to confirm resetting, or READ button to cancel

## Status

1. Press POWER button to turn on and off the device
2. The device enters into energy-saving mode after standing by for more than 60 seconds. Press POWER button to wake up the device
3. The refractometer will turn off after 90 seconds of no operation

## Keys (buttons)

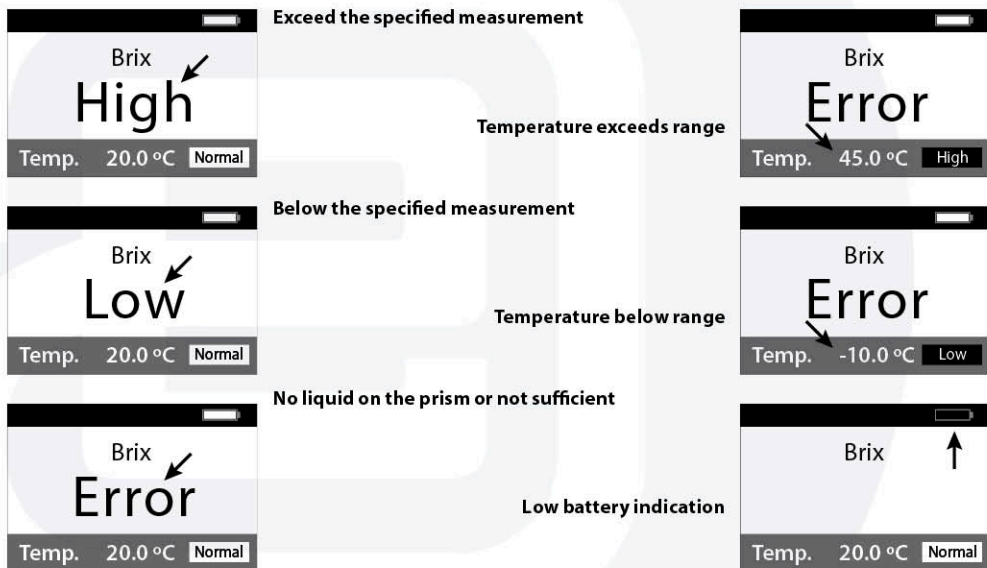
 Power	i) Turn on meter; or ii) Turn off meter after pressing for 3 seconds
 Zero	i) Zero calibration; or ii) Press for 2 seconds to toggle between °C and °F
 Read	i) Press the button to read after drop samples; or ii) Press for 2 seconds to toggle between measured items
 Power +	Reset to factory setting

## Troubleshooting

### Out of calibration (zero set) range

Action: Make sure you are using the correct calibration solution, refer to the specification table. Make sure there is sufficient amount of calibration liquid to cover the prism surface





## Maintenance

### **Warning:**

- Fail to follow these precautions will void the warranty and may cause instrument damage or inaccurate readings
- Please keep the measuring surface clean. After each use, thoroughly clean the measuring surface with a damp, soft, clean cloth or paper or towel. This prevents cross-contamination between samples and provides accurate subsequent readings. Solvent or petroleum based cleaners are not recommended

### **Important precautions:**

1. Do not expose the instrument to an environment with too low or too high of temperature or prolonged exposure of strong direct sunlight
2. The instrument should be avoided from violent shock
3. Do not disassemble or assemble the instrument or change the inner parts
4. Calibration should be implemented strictly according to the instruction
5. Be sure to clean the prism surface and window of stage before and after every measurement
6. To avoid that accuracy is affected by evaporation, be sure to implement measurement immediately after dripping solution on prism
7. It may cause wrong result if keep measuring under low voltage
8. Do not use the instrument under the humid and corrosive environment
9. During the measurement, please avoid strong light (such as sunlight, lamp etc.)
10. When storing the instrument for long periods of time, it is advisable to remove the batteries. Use only AAA batteries. Pay close attention to battery polarity when inserting batteries. Reversing the polarity can cause instrument damage