**OLED display**

Features

- **OLED display**
- Two color OLED display, more display modes
- Low-power consumption, continuously four direction adjustable
- Low voltage indicator
- Automatically power off in 8 seconds when there is no signal
- Small in volume, light in weight, and convenient to carry

**Key function:** start machine in power off status, change display direction in working status.

**Product Operation Scope**

The fingertip Oximeter can be used to measure human haemoglobin saturation and heart rate through finger. The product applies for use in family, hospital (including clinical use in internal/hiturgery, anaesthesia, paediatrics, intensive care, etc.), oxygen club, social medical organizations, physical care in sports (it can be used before or after sports. Operation in sport procedure is not recommended). It is also applicable to enthusiasts on mountaineering, patients (convalescents at home or those need first aid treatment): elders over 60, those who work more than 12 hours, sportsmen and those work in the hermetic circumstance, etc. The product is not suitable to monitor patient continuously.

**Detailed descriptions of product functions**

1. **Display Type:** LCD display or OLED display.
   - **SpO2:** Measurement range: 70% - 99%
     - Accuracy: ±2% on the stage of 70% - 99%, Unspecified for ≤95%.
     - Resolution: ±1%
2. **PR:** Measurement range: 30BPM - 240BPM
   - Accuracy: ±1BPM or ±1 (the larger one).
3. **Power:** two AAA 1.5V alkaline batteries
4. **Power consumption:** below 30mA
5. **Automatic power-off:** the product shuts off by itself when no finger is on the product in 10 seconds.
6. **Dimension:** 62×29×33mm
7. **Operation Environment:**
   - Operation Temperature: 0°C - 40°C
   - Storage Temperature: -10°C - 40°C
   - Ambient Humidity: 10% - 90% no condensation
   - Air Pressure: 700-1060Pa
8. **Declaration:** EMC of this product comply with EC08901-1-2 standard.
9. **Measurement Performance in Low-Performance Condition:** required test equipment (BIO-TEK INDEX Pulse Oximeter tester can measure the available pulse wave with the amplitude of 6% of the simulation pulse wave amplitude.
10. **Interference Resistance Capacity against Ambient Light:** device works normally when BIO-TEK INDEX Pulse Oximeter tester exists interfering signal test.
**Fingertip Pulse Oximeter User Manual**

**Measurement principle**

The principle of measurement is to detected the wavelength change of oxygen and hemoglobin concentration in human tissue through specific absorption spectrum absorption characteristic of red blood cells. The absorption characteristics are obtained through Lamber-Beer Law according to the absorbance spectrum characteristics of oxygenated hemoglobin (HbO2) and deoxygenated hemoglobin (Hb) in blood and special spectrum absorption features for oxygen and hemoglobin concentration. Since the tissue has significant absorption characteristics near 415, 660, and 950 nm, the specific absorption spectrum can be controlled. Human tissue can be considered as a semi-transparent cylinder, and the light of the light source can be detected using a photodetector via the tissue. The detected signal is processed and converted to a digital signal, which is then displayed on the screen.

**Fingertip Pulse Oximeter Operation**

1. Press the button located at the front panel. Keep pressing until the display shows the correct measurement.
2. Place the fingertip to be measured into the measurement area.
3. The measurement will automatically pause when no finger is detected.
4. The measurement will automatically resume once the finger is detected.
5. Make sure the finger is not excessively cold or hot.
6. The measurement will automatically stop when no movement is detected.

**Possible Problems and Solutions**

- **Problem:** The measurement is not accurate.
  - **Solution:** Ensure the finger is well-sealed and that the light source is properly aligned.
- **Problem:** The measurement takes too long.
  - **Solution:** Check the finger position and ensure the light source is properly aligned.
- **Problem:** The measurement is not displayed.
  - **Solution:** Ensure the finger is well-sealed and the light source is properly aligned.

**General Description**

Fingertip Pulse Oximeters are used to measure oxygen saturation levels in the blood. The device uses infrared and red light to measure the amount of oxygen in the blood. The device is calibrated to ensure accurate readings.

**Operation and Definitions**

- **SP02:** The percentage of oxygen saturation in the blood.
- **Pulse Rate (P-R):** The number of heartbeats per minute.
- **IR:** The infrared light source.
- **Red:** The red light source.
- **Oxygen Saturation:** The percentage of hemoglobin in the blood that is bound to oxygen.
- **Pulse Oximetry:** A method of measuring oxygen saturation in the blood using light absorption properties.
Precautions for use

Classification / Accessories / Guidance / Maintenance and Preservation

Guidance and manufacturer’s declaration-electromagnetic radiation-for other EQUIPMENTS and SYSTEMS

The Pulse Oximeter is designed to be used in specified electromagnetic environment.

Users of the Pulse Oximeter must use it in the following environments.

<table>
<thead>
<tr>
<th>Radiation Test</th>
<th>Compliance</th>
<th>Electromagnetic environment-guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Interference</td>
<td>Class 1</td>
<td>RF signal of Pulse Oximeter is simply created by its internal function. Therefore, its RF interference is very low and is not likely to cause any interference to nearby electronic equipment.</td>
</tr>
</tbody>
</table>

Product Accessories

One hang lace
Two batteries
One user manual

Maintenance and Preservation

01. Replace the batteries timely when low voltage lamp is on.
02. Clean the surface of finger tip oximeter before it is used to diagnose patients.
03. Remove the batteries inside if you will not operate the Oximeter for a long-time.
04. It would be better to preserve the product in 10-40℃ (14-104 °F) and humidity is 10%-80%.
05. It is recommended that the product should be kept dry anytime. A wet ambience might affect its lifetime and even damage the product.
06. Please follow the law of the local government to deal with used batteries.

Classification

01. Management Class for Medical Devices:
   Equipment

02. Anti-electric Shock Type:
   Internally powered equipment
   Type RF equipment

1. It may cause inaccurate reading when the positions of sensor and blood pressure cuff are on the same arterial catheter or intravenous line.
2. Hypotension, severe vasoconstriction, severe anemia, or hypothermia may cause inaccurate reading.
3. It may cause inaccurate reading by giving use of cardiaco to patient after his cardiac arrest or when he is in quiver.
4. Bright nail or painted nail may cause inaccurate SpO2 reading.

Follow local ordinances and recycling instructions regarding to disposal or recycling of the device and device components, including batteries.