

Zacurate 500C

Zacurate 500C Elite Fingertip Pulse Oximeter User Manual

Model: 500C

1. INTRODUCTION

The Zacurate 500C Elite Fingertip Pulse Oximeter is designed for non-invasive spot-check measurement of functional oxygen saturation of arterial hemoglobin (SpO2) and pulse rate. This device is intended for sports and aviation use only and is not a medical device. It is suitable for use at home, during sports activities, and high-altitude activities.

2. SAFETY INFORMATION

Please read all instructions carefully before using the device. Failure to follow instructions may result in inaccurate readings or device damage.

- This device is for sports and aviation use only. It is not intended for medical diagnosis or treatment.
- Do not use the pulse oximeter in an MRI or CT environment.
- Do not use the device on the same finger for more than 5 minutes continuously to avoid discomfort or swelling.
- Keep the device away from young children. Small parts may pose a choking hazard.
- Avoid using the device in direct sunlight or in areas with high humidity.
- Do not immerse the device in water or other liquids.

3. PRODUCT OVERVIEW

The Zacurate 500C Elite Fingertip Pulse Oximeter features an OLED display and a compact design for easy use.



Figure 1: Zacurate 500C Elite Pulse Oximeter. This image shows the overall design of the Zacurate 500C Elite Fingertip Pulse Oximeter with its OLED display.



Figure 2: Device Components. This image shows the Zacurate 500C Elite Pulse Oximeter with various parts labeled, including the Lanyard Loop Hole, Battery Cover, Blood Oxygen Saturation Level display, Pulse Rate display, Plethysmograph, One-Button Operation, and Finger Opening.

3.1 Components

- **OLED Display:** Shows SpO2, Pulse Rate, Plethysmograph, and battery indicator.
- **Power Button:** For turning the device on/off and changing display modes.
- **Finger Opening:** Where the finger is inserted for measurement.
- **Battery Compartment:** Located at the rear of the device.
- **Lanyard Loop Hole:** For attaching the included lanyard.

4. SETUP

4.1 Package Contents

The package includes:

- Zacurate 500C Elite Fingertip Pulse Oximeter
- 2 x AAA Batteries
- Silicone Cover
- Lanyard
- User Manual



Figure 3: Package Contents. This image displays the Zacurate 500C Elite Pulse Oximeter, its packaging box, a user manual, two AAA batteries, a silicone protective cover, and a lanyard.

4.2 Battery Installation

1. Open the battery cover on the back of the device.
2. Insert the two AAA batteries according to the polarity indicators (+/-) inside the compartment.
3. Close the battery cover securely.

4.3 Attaching the Lanyard

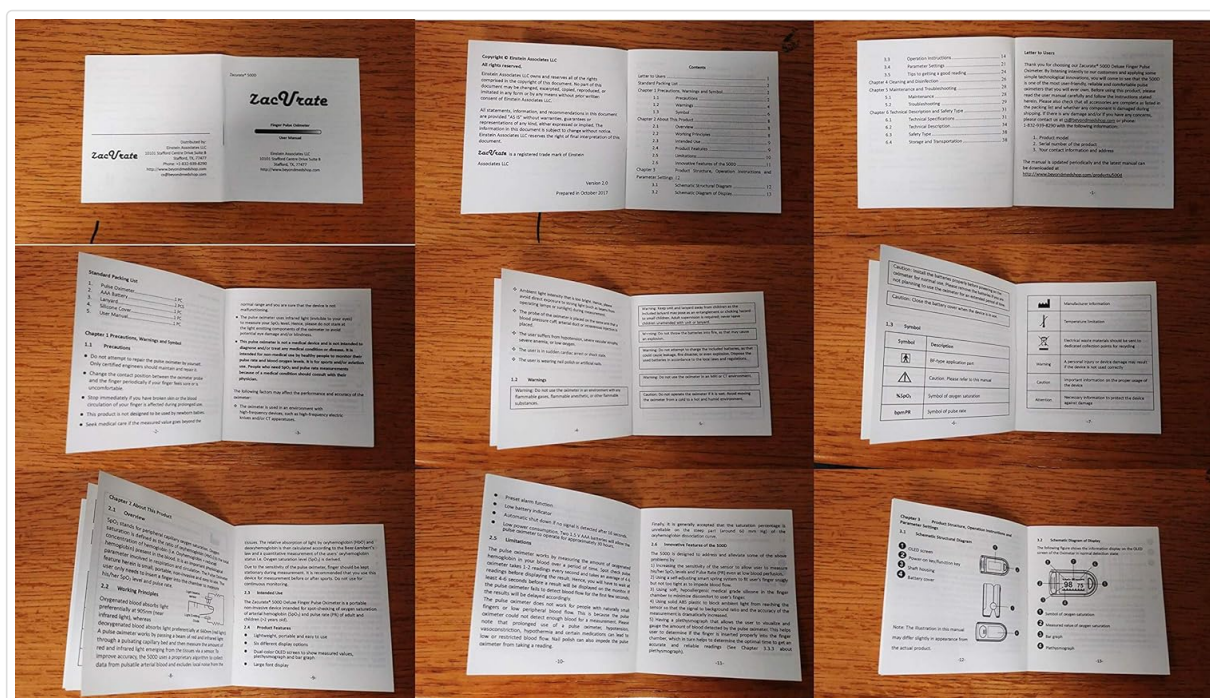


Figure 4: Lanyard Attachment Steps. This image illustrates a three-step process for attaching the lanyard: 1. Insert the

loop into the lanyard holes. 2. Thread the lanyard strap through the loop. 3. Pull the lanyard strap until it is tight and secured.

1. Insert the thin end of the lanyard loop into the lanyard hole on the device.
2. Thread the thicker part of the lanyard through the loop.
3. Pull gently to secure the lanyard.

5. OPERATING INSTRUCTIONS

5.1 Taking a Measurement

1. Ensure batteries are correctly installed.
2. Open the clamp of the oximeter.
3. Insert one finger (preferably the index finger) into the rubber opening of the oximeter, ensuring the fingernail is facing upwards towards the display.
4. Release the clamp.
5. Press the power button once to turn on the oximeter.
6. Keep your hand still during the measurement. Readings will appear on the display within a few seconds.
7. The device will automatically power off after 8 seconds of inactivity.



Figure 5: Proper Finger Placement. This image demonstrates a finger correctly inserted into the Zacurate 500C Elite Pulse Oximeter for measurement.

5.2 Display Information

The OLED display shows the following information:

- **SpO2:** Blood Oxygen Saturation Level (%).
- **PRbpm:** Pulse Rate (beats per minute).
- **Plethysmograph:** A waveform graph indicating pulse strength.
- **Battery Indicator:** Shows remaining battery life.

5.3 Display Modes and Brightness

Press the power button briefly while the device is on to cycle through 6 different display orientations. To adjust display brightness, press and hold the power button for approximately 1 second while the device is on.



Figure 6: Multiple Display Orientations. This image shows six different ways the information can be displayed on the oximeter screen, allowing for convenient viewing from various angles.

6. FEATURES

- **Auditory Alarm:** Alerts the user when SpO2 and Pulse Rate values fall outside preset limits.
- **Auditory Pulse Beeps:** Provides an audible beep for each detected pulse.
- **Adjustable Display Brightness:** Allows customization of screen intensity.
- **OLED Display with Plethysmograph:** High-quality display showing both numerical values and a visual representation of pulse strength.

7. MAINTENANCE AND STORAGE

7.1 Cleaning

- Clean the surface of the oximeter with a soft cloth dampened with medical alcohol (70% isopropyl alcohol).
- Do not use abrasive cleaners or immerse the device in liquid.
- Ensure the device is dry before reuse.

7.2 Storage

- Store the device in a cool, dry place, away from direct sunlight and extreme temperatures.
- Remove batteries if the device will not be used for an extended period to prevent battery leakage.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
No display after power on	Batteries are dead or incorrectly installed.	Replace batteries or reinstall them correctly, observing polarity.
Display shows "Finger Out" or "Error"	Finger not inserted properly or movement during measurement.	Reinsert finger correctly and keep still. Ensure fingernail is facing upwards.

Problem	Possible Cause	Solution
Inaccurate readings	Excessive movement, cold fingers, nail polish, or strong ambient light.	Ensure finger is warm and still. Remove nail polish. Avoid strong light.
Device powers off unexpectedly	Low battery or automatic shutdown after inactivity.	Replace batteries. This is normal if no finger is detected for 8 seconds.

9. SPECIFICATIONS

Parameter	Value
Model Number	500C
Product Dimensions	2.25 x 1.25 x 1.25 inches
Weight	3.12 ounces (with batteries)
Measurement Accuracy (SpO2)	+/-2%
Measuring Range (SpO2)	0-100%
Measuring Range (Pulse Rate)	30-250 BPM
Display Type	OLED
Power Requirements	2 x AAA batteries
Automatic Shut-off	After 8 seconds of inactivity

10. WARRANTY AND SUPPORT

The Zaccurate 500C Elite Fingertip Pulse Oximeter comes with a **12-month warranty**. For technical support or warranty claims, please contact our USA-based support team.

11. CONTACT INFORMATION

For any questions or further assistance regarding your Zaccurate 500C Elite Pulse Oximeter, please use the following contact details:

Phone: 832-939-8290

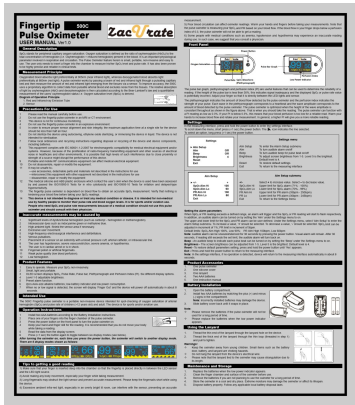
Email: cs@beyondmedshop.com

Website: zaccurate.com

12. VIDEO RESOURCES

No official product videos from the seller were available with specific embeddable URLs and metadata for inclusion in this manual.

<div><p>FAQ</p><p>How do I know the battery is low?</p><p>When you use the device, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen.</p><p>How do I know the battery is low?</p><p>When you use the device, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen.</p><p>How do I know the battery is low?</p><p>When you use the device, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen.</p></div>	<p>Zacurate Pulse Oximeter FAQ and User Guide</p> <p>Frequently asked questions and answers about Zacurate fingertip pulse oximeters, covering battery life, usage, accuracy, and normal readings. Learn about SpO2 and pulse rate monitoring.</p>
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<div><p>Fingertip 500CL SpO2/Pulse</p><p>Quick Start Guide</p><p>How to get accurate and reliable readings</p><p>How to get accurate and reliable readings</p><p>How to get accurate and reliable readings</p></div>	<p>Zacurate 500CL Fingertip Pulse Oximeter User Manual - SpO2 and Pulse Rate Monitoring</p> <p>Comprehensive user manual for the Zacurate 500CL Fingertip Pulse Oximeter. Learn how to use, maintain, and understand SpO2 and pulse rate measurements for sports and aviation.</p>
<div><p>Quick Start Guide</p><p>How to get accurate and reliable readings</p><p>How to get accurate and reliable readings</p><p>How to get accurate and reliable readings</p></div>	<p>Zacurate 500DL Fingertip Pulse Oximeter Quick Start Guide and Troubleshooting</p> <p>Quick start guide and troubleshooting solutions for the Zacurate Pro Series 500DL Fingertip Pulse Oximeter. Learn how to get accurate SpO2 and pulse rate readings, and resolve common issues.</p>
<div><p>Battery Installation Instructions</p><p>How to get accurate and reliable readings</p><p>How to get accurate and reliable readings</p><p>How to get accurate and reliable readings</p></div>	<p>Zacurate 500BL Pulse Oximeter Battery Installation Guide</p> <p>Step-by-step instructions for installing AAA batteries in the Zacurate 500BL fingertip pulse oximeter, including important notes on battery orientation and a detailed description of the process.</p>
<div><p>FAQ</p><p>How do I know the battery is low?</p><p>When you use the device, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen.</p><p>How do I know the battery is low?</p><p>When you use the device, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen.</p><p>How do I know the battery is low?</p><p>When you use the device, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen. When the battery is low, you will see a low battery icon on the screen.</p></div>	<p>Zacurate Pulse Oximeter FAQ and User Guide</p> <p>Frequently asked questions and answers about Zacurate fingertip pulse oximeters, covering battery life, usage, accuracy, and normal readings. Learn about SpO2 and pulse rate monitoring.</p>



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ratio of oxyhemoglobin HbO2 to the total concentration of hemoglobin i.e.
Oxyhemoglobin reduced hemoglobin present in the blood. It...

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The performance of 11 fingertip pulse oximeters during hypoxemia in healthy human participants with varied, quantified skin pigment

Nonin Onyx Vantage 9590® is the Only Pulse Oximeter Within FDA ARMS Guidelines Across All Skin Pigmentations and Oxygen Saturation Ranges

Summary

In a controlled study conducted by researchers at the University of California, San Francisco and other institutions, the performance of 11 fingertip pulse oximeters was evaluated in 35 healthy human participants with varied skin pigmentation.* This study was the first to incorporate both objective and subjective measurements of skin pigmentation, addressing a historical lack of reliable classification in how skin pigmentation is identified within pulse oximetry studies. The study sought to deliver a more accurate picture of pulse oximeter performance, especially in people with dark skin pigmentation.

*Device performance is largely unregulated and poorly characterized, especially in people with dark skin pigmentation. The authors noted:

The study measured oxygen saturation (SpO₂) levels in participants with different skin pigmentation, ranging from 70–100% SpO₂. It compared the bias and absolute bias of the 11 pulse oximeters against a reference device (Radiometer AB602-Red-Pulse oximeter) across the different skin pigmentation and SpO₂ ranges. Only four of the devices have FDA 510(k) clearance (Nonin Onyx 9590, Masimo MightySat, Contec, Biolight).

The data found that five of the 11 devices resulted in greater than 3% root mean square error (RMSE) and did not meet FDA criteria for accuracy (less than 3% RMSE). Seven of the fingertip pulse oximeters are part of the ubiquitous low-cost devices flooding the market. None of the low-cost devices met FDA arms guidelines in dark skin pigmentation at both of the low blood oxygen saturations (70–80% and 80–90%). In the 80–90% saturation range, when many clinicians are initially alerted to issues, Nonin was the only device to perform under 2% bias in the darkest skin pigmentation. The risk of low-cost and non-regulated devices reading inaccurately and potentially misdiagnosing hypoxemia in patients of color continues to be a problem.

Equitable and accurate pulse oximetry has been a significant issue, which the COVID-19 pandemic highlighted. Nonin's fingertip pulse oximeters outperform low-cost oximeters, especially in patients with darker skin pigmentation.

*Varied devices included the Nonin Onyx Vantage 9590, Masimo
MightSat, Walgreens MD300CN350R, Zacurate CMS 500DL, Walgreens
OxyWatch C20, Choice MMed MD300CN340, Zacurate 500C, Bodymed
BDMOXMTRBLK, Roscoe POX-ROS, CONTEC CMS50M and Biolight M70.



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