

# Nonin 3230 *Bluetooth*<sup>®</sup> Smart Nonin 3231 USB

## *Pulse Oximeters*

- ✓ Spot-on Accuracy
- ✓ Spot-on Connectivity
- ✓ Spot-on Usability



## Spot-on. For Information You Can Act On.

Nonin Medical's high-performing OEM pulse oximeters provide the solution for your SpO<sub>2</sub> and pulse rate spot-checking monitoring needs. With *Bluetooth*<sup>®</sup> Smart wireless technology (Model 3230\*) or USB connection (Model 3231\*), Nonin's clinically proven accuracy provides peace of mind in knowing you are getting precise readings. Only Nonin has SmartPoint™ capture and send and CorrectCheck™ technologies to provide advanced information you can act on. And, Nonin's Model 3230 is the first finger pulse oximeter with Bluetooth Smart wireless technology, which provides a simplified pairing for vital information exchange over a secure wireless connection.

*Try one of our development kits to see how Nonin's OEM solutions meet your SpO<sub>2</sub> monitoring needs.*

# Spot-on. For Information You Can Act On.

With more than 1.2 million pulse oximeters sold, Nonin Medical provides unparalleled accuracy and performance. Unlike health and wellness pulse oximeters, Nonin's Model 3230 and 3231 oximeters are highly accurate medical devices. Nonin's OEM pulse oximeters are valuable tools in any situation where accurate readings of blood oxygen saturation and pulse rates are needed. They aid in proactively identifying issues for early intervention and avoiding re-hospitalization. And, Nonin's pulse oximeters are ideal for remote monitoring situations, as they easily connect to your telemedicine hubs.

## Product Highlights

### Spot-on Accuracy

- ✓ Features algorithms specifically for patients with challenging conditions, unlike other low-cost pulse oximeters
- ✓ Quickly provides clinically proven accurate SpO<sub>2</sub> and pulse rate readings from small to large fingers, good to low perfusion, and dark to light skin tones
- ✓ Proprietary CorrectCheck™ technology gives feedback when the finger is not placed properly in the device

### Spot-on Connectivity

- ✓ Easily integrates into most telemedicine hubs via Bluetooth Smart wireless technology or USB port

### Spot-on Usability

- ✓ Easy-to-read large display for patient use
- ✓ High quality product with proven durability for any environment
- ✓ Long battery life – Model 3230 oximeter allows for up to 2,200 spot checks on two AAA batteries



Visit [nonin.com/oem](http://nonin.com/oem) for more information.

Nonin has evidenced-based accuracy and performance claims that are supported by published peer-reviewed and clinical studies. Nonin provides information at your fingertips:

### SmartPoint™ Capture and Send Technology

- The SmartPoint algorithm automatically determines when a high quality measurement is ready to be wirelessly transmitted. And each measurement includes an indicator of quality.

### SmartPoint Sync Feature

- This new feature indicates to the user when the oximeter is syncing with the hub. User can remove oximeter after sync is complete. Refer to the Integration Guide for more information.

### Pulse Amplitude Strength Reporting

- Provides pulse amplitude index number in the data stream – no need to calculate your own number. This number can help you monitor patients with complex conditions.

### PureSAT® Technology

- Only Nonin's oximeters use PureSAT® SpO<sub>2</sub> technology, including motion tolerant algorithms, which allows for pulse-by-pulse readings that can capture events such as rapid desaturation.

### Accuracy in the Widest Range of Patients

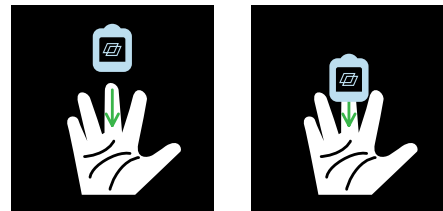
- Dependable accuracy in the widest range of patient populations and settings, so you can provide one device for your clients.
- Automatically adjusts to each patient, from small fingers to larger fingers, quickly and accurately, and accommodates a wide range of digit thicknesses: 8 mm to 25.4 mm (0.3" to 1.0").



Model 3231

### CorrectCheck™ Finger Placement Technology

- Nonin's proprietary CorrectCheck technology provides feedback via a digital display if the finger is not placed correctly in the device indicating to patients to insert their digit further. This is helpful as improper finger placement may lead to incorrect readings.



- This information is also provided in the data stream to allow a remote nurse to coach patients on finger placement.

### Automatic Turn On and Off

- No on/off button! Easy for any user. Just insert digit for fast first reading and easy spot checks.
- The auto-on/off mechanism on Nonin 3230 oximeter allows two AAA batteries to provide up to 2,200 spot checks before being replaced!

### Large, Clear Display

- SpO<sub>2</sub> and pulse rate can easily be read, and the Nonin 3230 oximeter shows when the battery is low and if you are connected via Bluetooth technology.

### Proven Durability and Quality

- Nonin's product protects against dropping and water spills and allows for thousands of uses. And, Nonin 3230 and 3231 oximeters have a long-term, 2-year warranty.
- The Nonin 3230 and 3231 oximeters are RoHS compliant and environmental friendly with no lead or hazardous materials\*.

\*Hazardous materials are defined by REACH compliance.

# Which model is right for you?

Nonin 3230 is an **external wireless oximeter** and uses Bluetooth® 4.0 single-mode low energy wireless technology to transmit information to a Bluetooth Smart Ready device.

- Simple and secure connection to Bluetooth Smart Ready devices
- Information easily integrates into your telemedicine hubs
- Bluetooth wireless connectivity status indicator on device
- Long battery life

Nonin 3231 is an **external oximeter** and plugs into a telemedicine hub or kiosk through an external port USB connector.

- Ideal for health kiosk application with USB connectivity
- Now incorporating a display with easy-to-read SpO<sub>2</sub> and pulse rates



## Specifications (Model 3230 only)

<b>Dimensions</b> .....	46mm (1.81") x 69mm (2.72") x 31mm (1.22")
<b>Weight</b> .....	63 grams with batteries installed
<b>Warranty</b> .....	2 years
<b>Oxygen Saturation Display Range</b> .....	0 – 100% SpO <sub>2</sub>
<b>Pulse Rate Display Range</b> .....	18 – 321 beats per minute (BPM)
<b>Oxygen Saturation Declared Accuracy</b>	
Range (A <sub>rms</sub> *) .....	70 – 100% SpO <sub>2</sub> ±2 digits
<b>Low Perfusion Oxygen Saturation Declared Accuracy Range (A<sub>rms</sub>*)</b> .....	70 – 100% SpO <sub>2</sub> ±2 digits
<b>Pulse Rate Declared Accuracy</b>	
Range (A <sub>rms</sub> *) .....	20 – 250 BPM ±3 digits
<b>Low Perfusion Pulse Rate Declared Accuracy Range (A<sub>rms</sub>*)</b> .....	40 – 240 BPM ±3 digits
<b>Measurement Wavelengths and Output Power**</b>	
Red .....	660 nanometers @ 0.8 mW maximum average
Infrared .....	910 nanometers @ 1.2 mW maximum average
<b>Temperature</b>	
Operating .....	-5° to +40°C (+23° to +104°F)
Storage/Transportation .....	-40° to +70°C (-40° to +158°F)***
<b>Humidity</b>	
Operating .....	10 – 95% relative humidity, non-condensing
Storage/Transportation .....	10 – 95% relative humidity, non-condensing (allow to stabilize)

### Altitude

Operating .....	Up to 12,192 meters (40,000 feet)
Hyperbaric Pressure .....	Up to 4 atmospheres

### Internal Power

Battery .....	Two 1.5 volt AAA batteries
Operating .....	2200 spot-checks (25 sec/spot-check), within 10 feet from collector while in a connection
Storage .....	3 months****

### Bluetooth Information

Bluetooth Compliance .....	Version 4.0 single mode low energy
Operating Frequency .....	2.4 – 2.4835 GHz
Output Power .....	TX: +3dBm to -23dBm
Operating Range .....	10 meter radius (line of sight)
Network Topology .....	Star –bus
Operation .....	Slave
Antenna Type: .....	Integrated chip type antenna
Modulation Type: .....	Frequency Hopping Spread Spectrum
Bluetooth Profiles Supported: .....	GATT based proprietary Nonin profile
Authentication and Encryption: .....	Supported
Encryption Key Size: .....	128 bits

### Classifications per IEC 60601-1 / CAN/CSA-C22.2 No. 601.1 / UL 60601-1:

Degree of Protection .....	Type BF-Applied Part
Mode of Operation .....	Continuous
Enclosure Degree of Ingress Protection .....	IP32

**Nonin Model 3230 is RoHS compliant and environmentally friendly with no lead or hazardous materials. REACH compliant December 2012 revision.**

This product complies with ISO 10993-1, Biological evaluation of medical devices – Part 1: Evaluation and testing.

\*±1 A<sub>rms</sub> represents approximately 68% of measurements.

\*\*This information is especially useful for clinicians performing photodynamic therapy.

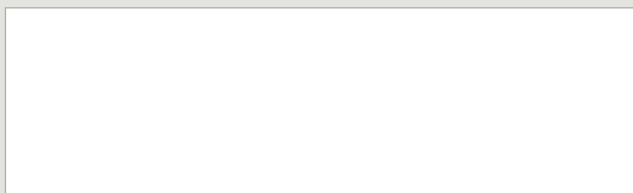
\*\*\* When the oximeter is transferred from a non-operating temperature/humidity condition, allow one hour of stabilization to operating temperature/humidity specifications prior to use.

\*\*\*\*If the device will not be used for 30 days or more, remove the batteries to prevent battery leakage.

Specifications are subject to change without notice.

Contact Regulatory@nonin.com for regulatory status.

Authorized Distributor:



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