

Nonin Medical OEM Pulse Oximetry Solutions

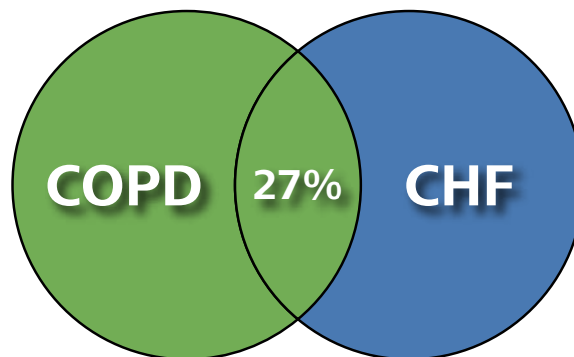
Superior Performance for Challenging Patient Conditions



COPD patients often present with **complex co-morbidities**

When treating patients with Chronic Obstructive Pulmonary Disease (COPD), making the right decision is often dependent on getting an accurate oxygen saturation (SpO₂) reading. Getting accurate readings can be more difficult in COPD patients with cardiovascular co-morbidities, such as congestive heart failure (CHF).

Up to 27% of COPD patients may also have congestive heart failure¹



COPD patients with CHF can challenge oximeter accuracy

Poor blood circulation

- Poor blood circulation is a symptom of CHF² and can result in low pulse strength.
- Low pulse strength can cause inaccurate oximeter readings.

Drops in oxygen levels (desaturation)

- COPD patients have little or no oxygen reserve capacity in their lungs and can be living on the edge of hypoxemia.³
- Many oximeters average measurements over numerous pulses, resulting in a delayed or inaccurate reading during desaturation events.

Trust Nonin Medical's **PureSAT[®]** technology
for accurate results in challenging conditions.

¹PHC4-provided hospital discharges between Oct 1, 2007 and Sept 30, 2008. Pittsburgh Regional Health Initiative 2010.

²Mechanisms of Disease: Congestive Heart Failure. Loyola University Medical Education Network. <http://www.meddean.luc.edu/lumen/meded/mech/cases/case4/chf.htm>

³Wild Iris Medical Education, Case Manager CEU, www.nursingCEU.com Chronic Obstructive Pulmonary

Superior technology for challenging conditions...including rapid SpO₂ changes, poor peripheral blood circulation and motion

The inventor – Nonin developed finger pulse oximetry and has over 25 years of clinical experience.

Peer-reviewed accuracy, FDA-cleared – The accuracy and performance of Nonin PureSAT technology is supported by published, peer-reviewed clinical studies.

U.S. military certified* – The only finger pulse oximeter that has airworthiness approval for use in military aircraft.

PureSAT® SpO₂ technology

The only oximeter with pulse-by-pulse filtering – Nonin Medical’s clinically proven PureSAT technology utilizes intelligent pulse-by-pulse filtering to provide fast, precise oximetry measurements — even in the presence of SpO₂ changes, poor peripheral blood circulation, motion and other challenging conditions.

PureLight® sensor technology

Only the purest red and infrared sensors – Nonin’s PureLight LEDs hold a steady calibration curve, even at SpO₂ levels below 80% where reliable information is even more critical.

Superior accuracy during patient motion

In a study comparing accuracy in motion, Nonin and a competitor’s finger pulse oximeter were tested during motion and compared to arterial blood gas samples.⁴

Control (Blood Gas)	Nonin	Competitor
97.3%	99%	90% (False Low)
92.8%	93%	No Value
86.2%	89%	99% (False High)
71.6%	73%	96% (False High)

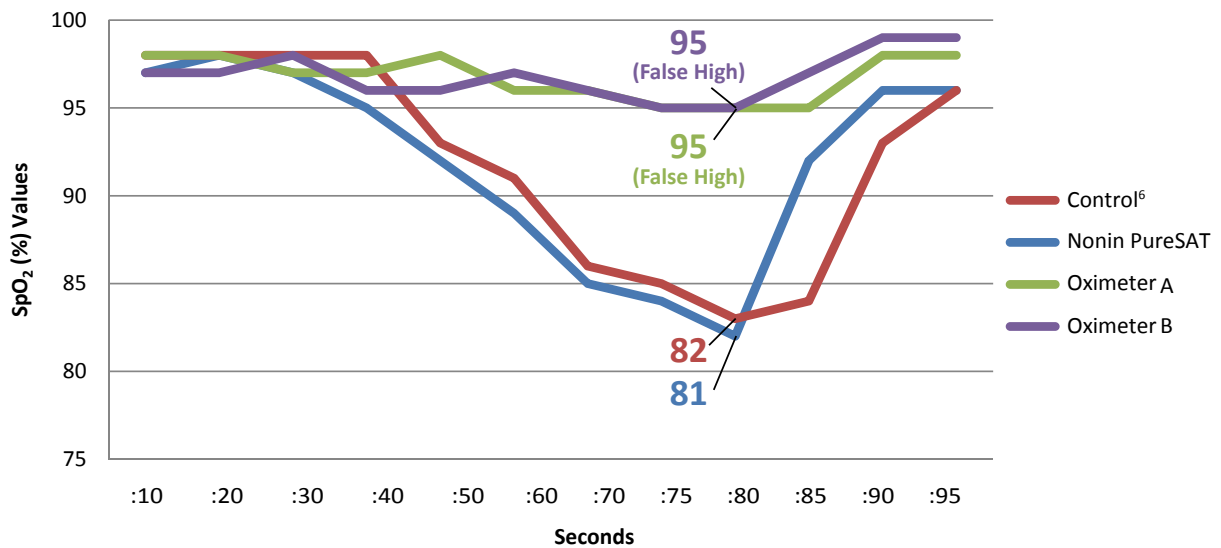
Only Nonin’s oximeter technology reads accurately during patient motion.

The competitor oximeter gave **false low** and **false high** SpO₂ readings and was unable to consistently read during patient movement (e.g., extend, flex, twitch, shake, clench, etc.).

*Onyx 9500 and Onyx II 9550 finger pulse oximeters are approved for airworthiness in U.S. military aeromedical aircraft.
⁴Study conducted in a leading hypoxia research lab. Competitor finger pulse oximeter manufactured by Beijing Choice Electronic Technology Co., LTD. This test is a competitive comparison. There are currently no finger pulse oximeters with accuracy in motion claims cleared by the FDA. Nonin Medical, Inc. Data on file.

Nonin PureSAT[®] Technology – accuracy

Only Nonin's PureSAT was able to track the subject's desaturation⁵



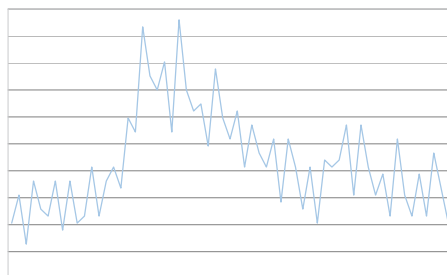
SpO₂ saturation values you can trust

- In the above comparison, Nonin oximetry with PureSAT was the only pulse oximeter to accurately track the subject's desaturation down to 81-82% and back up to 96% SpO₂. The two competitors registered changes of only 3% SpO₂.

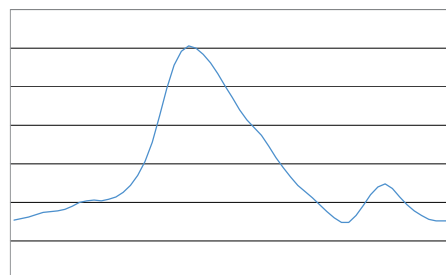
Accuracy in low perfusion

- The removal of noise artifact is critical to an oximeter's ability to accurately assess SpO₂ in low perfusion. PureSAT employs powerful filtering to achieve dependable, proven accuracy in low perfusion.
- Patients with thick fingers or dark skin tone or with low perfusion can challenge an oximeter's ability to locate the true pulse and the accurate SpO₂.

Pulse input into purification filter



Pulse output from purification filter



⁵Nonin Medical, Inc. Data on file.
⁶Control is Nellcor Tabletop Oximeter

in challenging patient conditions

Accurate readings in challenging patient conditions⁷

- Accuracy is not degraded due to dark skin pigmentation or thick fingers.

	Nonin SpO ₂ Pulse Strength Indicator	PureSAT® SpO ₂ Technology	Competitor SpO ₂ Technology
Perfusion level 0.70	Green	✓	✓
Perfusion level 0.60	Green	✓	No reading
Perfusion level 0.50	Green	✓	No reading
Perfusion level 0.40	Green	✓	No reading
Perfusion level 0.30	Yellow	✓	No reading
Perfusion level 0.20	Yellow	✓	No reading
Perfusion level 0.11	Yellow	✓	No reading
Perfusion level 0.10	Red	No reading	No reading

Nonin Medical's OEM Solutions

Nonin's OEM technology solutions provide you with greater flexibility for more applications. Our easy-to-integrate products and dedicated customer support team have helped more than 100 OEM customers bring low power, high accuracy medical devices to market. With more than 2 million Nonin pulse oximeters sold, Nonin's installed base is one of the world's largest in the medical professional and homecare segments.

Dedicated Customer and Technical Service

Nonin Medical's oximeters are produced in the USA. We have **dedicated customer and technical service staff** to serve your OEM needs globally from the USA.

Customer Service

Toll-free phone: (800) 356-8874 (US and Canada only)

Phone: +1 763-553-9968

E-mail: customerservice@nonin.com

Technical Service

Toll-free phone: (800) 356-8874 (US and Canada only)

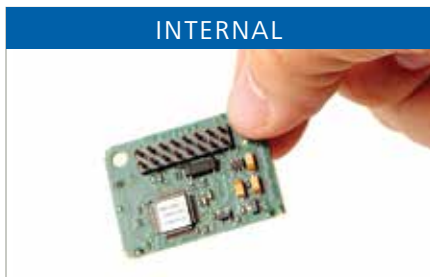
Phone: +1 763-553-9968

E-mail: technicalservice@nonin.com

⁷Nonin Medical, Inc. Data on file.

Nonin Medical's OEM Solutions

Nonin offers OEM product evaluation kits to help you evaluate how our OEM solutions will work for you. Each development kit includes the OEM product, demonstration software, technical documentation and any additional interface components required to operate the OEM device with your PC. Try one of our development kits to quickly and easily see how Nonin's OEM solutions can meet your monitoring needs.



OEM III Module
Internal OEM Pulse Oximeter



Xpod®
External Pulse Oximeter with Mini-12 or USB Connectors



Onyx® II, Model 9560
OEM Finger Pulse Oximeter with Bluetooth® wireless technology



Nonin 3230 Bluetooth® Smart
OEM Finger Pulse Oximeter with Bluetooth® Smart wireless technology



Nonin 3231 USB
OEM Finger Pulse Oximeter with USB Connector



WristOx₂®, Model 3150 – OEM
OEM Wrist-worn Pulse Oximeter with Bluetooth® wireless technology

Call your Nonin OEM sales representative today
or visit nonin.com/oemSolutions.



Nonin Medical, Inc.
13700 1st Avenue North
Plymouth, MN • 55441-5443 • U.S.A.
Tel: +1.763.553.9968 800.356.8874
Fax: +1.763.577.5521
E-mail: info@nonin.com

OEM Contacts
U.S. Sales:
Steve Carey, steve.carey@nonin.com
International Sales:
Joe Nagel, joe.nagle@nonin.com

nonin.com