

# Model 7600

- Sensors that minimize signal loss
- Superior accuracy and consistency
- Three-wavelength trending or four-wavelength absolute sensors that are tolerant of ambient light
- Portable
- No maintenance



# Model 7600 Regional Oximeter System

See the Difference

## Nonin Medical: Innovative Leaders in Noninvasive Physiological Monitoring

Nonin Medical is a technology-driven company and a global leader in developing noninvasive medical monitoring solutions that improve the quality of people's lives and enable them to live their lives to the fullest. We do this by developing low-cost, high-quality, easy-to-use technologies that empower clinicians to make better decisions and individuals to proactively manage their health.



### References

- <sup>1</sup>Cardiac Study on file at Nonin Medical.
- <sup>2</sup>Repeatability Study on file at Nonin Medical.
- <sup>3</sup>Exercise Comparison Study on file at Nonin Medical.
- <sup>4</sup>Cardiovascular Surgery Study on file at Nonin Medical.
- <sup>5</sup>Murkin JM et al; *Anesth Analg* 2007; 104:51.
- <sup>6</sup>Fischer, Gregory W. *Recent Advances in Application of Cerebral Oximetry in Adult Cardiovascular Surgery*, Seminars in Cardiothoracic and Vascular Anesthesia, March 2008.
- <sup>7</sup>Chen PhD, B. FORE-SIGHT Cerebral Oximetry Clinical Data Presentation DHCA Study, Mount Sinai Medical Center, Cerebral Oximetry Monitoring of Patients Undergoing Elective Thoracic Aortic Surgery with DHCA and SCP (15 Subjects), September, 2008.
- <sup>8</sup>Wolman RL et al; *Stroke* 1999; 30:514.
- <sup>9</sup>Mibrandt EB et al; *Crit Care Med*. 2008 Sep;36:2504.
- <sup>10</sup>Dasta JF; *Crit Care Med*. 2005 Jun;33:1266.
- <sup>11</sup>Goldman SM et al; *Sem Cardiothorac Vasc Anesth* 2006; 10:171.
- <sup>12</sup>Salazar JD et al; *Ann Thorac Surg* 2001;72:1195.
- <sup>13</sup>Cohn, T. *The Cost of Biomedical Repair and Maintenance: Results of a Survey*, Med Instrum, 1982 Sep-Oct;16(5):269-71.
- <sup>14</sup>QATR1587 Calibration and Validation of the Non-Invasive Regional Oximeter System
- <sup>15</sup>Data on file at Nonin Medical, Inc. Plymouth, MN

**Nonin Medical, Inc.**  
13700 1st Avenue North  
Plymouth, MN ■ 55441-5443 ■ USA  
P +1.763.553.9968 TF 800.356.8874  
F +1.763.577.5521 E info@nonin.com  
[www.nonlinequanox.com](http://www.nonlinequanox.com)

**Nonin Medical AB**  
Fibervägen 2, 82450  
Hudiksvall, Sweden  
P +46 650 401500  
F +46 650 401514  
E infointl@nonin.se

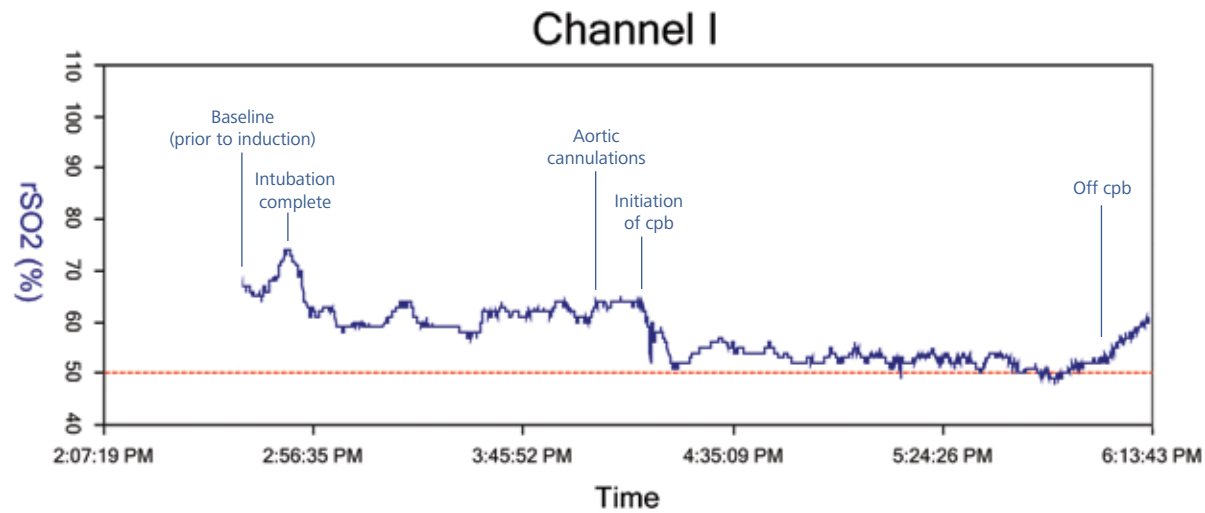


Connect Medizintechnik GmbH  
Gspanngasse 4 | A-2130 Mistelbach  
Tel: +43 664 168 68 08  
Fax: +43 2572 20404  
[www.connect-medizintechnik.at](http://www.connect-medizintechnik.at)



# Improved patient outcomes:

**EQUANOX Classic™ Sensor rSO<sub>2</sub> During Open Heart Cardiac Bypass Surgery: Stable and Responsive Measure of Patient Status**

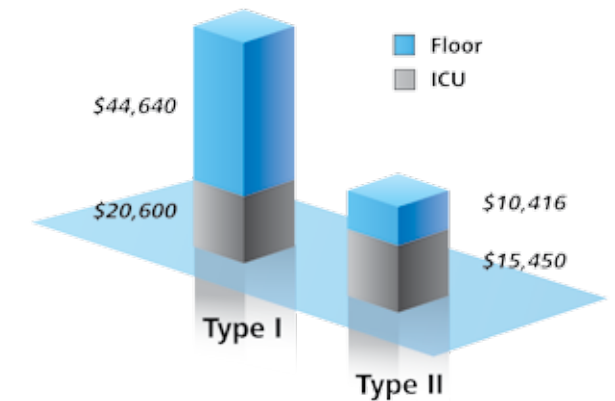


A direct correlation to significantly

# reduced costs

## EQUANOX Cerebral Injury Protection Results in Improved Outcomes and Reduced Costs

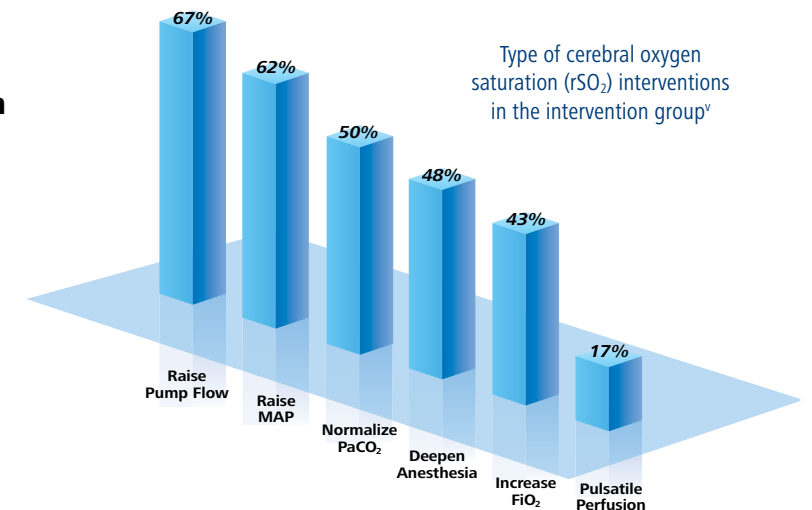
According to multi-disciplinary research, the annual cost of Type 1 and Type 2 cerebral injury for a hospital completing 500 open-heart cases per year can reach over \$10,000,000.<sup>viii,ix,x</sup> Studies show that noninvasive near-infrared technology (NIRS) is highly effective in detecting cerebral oxygen deficiencies. Stroke alone can be reduced 50% – 75%, resulting in significant savings on treatment costs.<sup>v,xi</sup>



The cost to treat a severe, Type I, cerebral injury patient (left) and a Type II patient (right) are shown in the above chart. Note: The cost to treat a stroke patient increases substantially if ventilation is required.<sup>xii</sup>

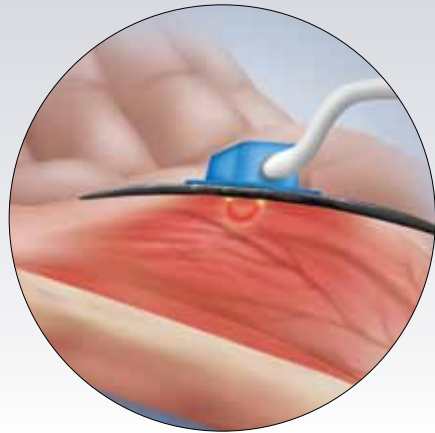
## Protect Your Patients and Facility from Costly Peri-Operative Cerebral Injury

Continuous cerebral oxygenation monitoring throughout the peri-operative cardiac surgery period is proven to reduce the rate of stroke.



# Consistency =

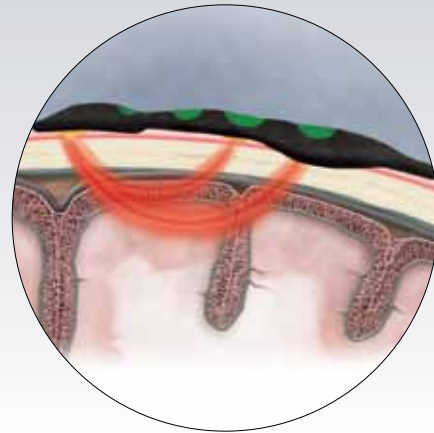
Nonin Medical superior signal processing



## 1) First Generation

One Emitter / One Receiver

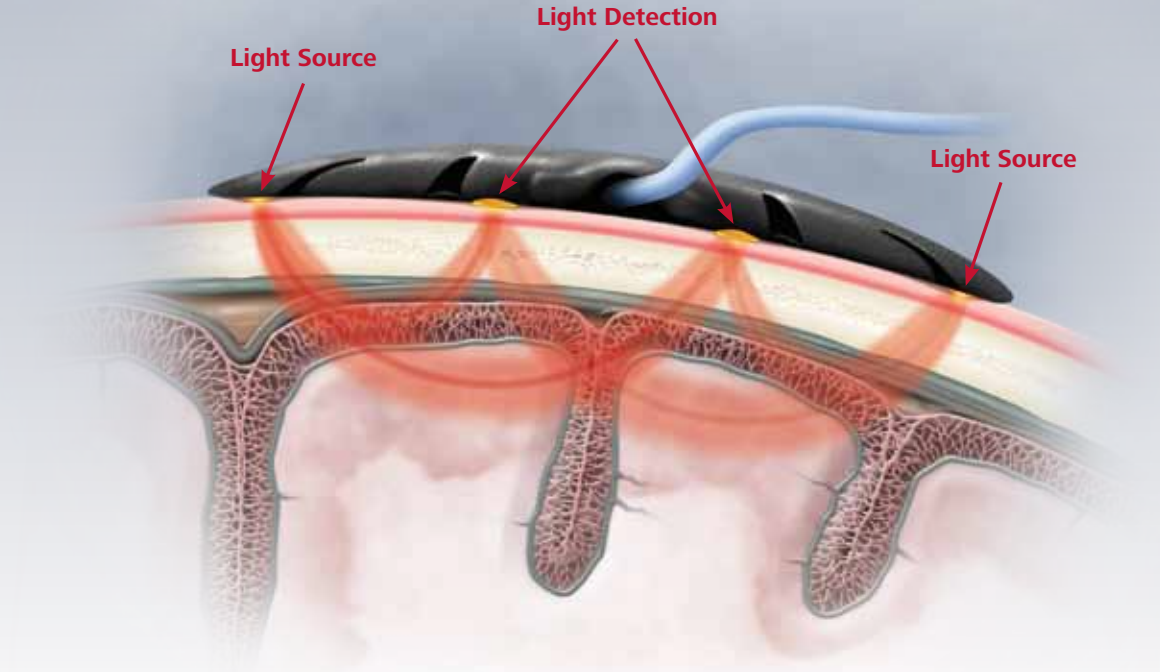
(Examples include Hutchinson Technology InSpectra™)



## 2) Second Generation

One Emitter / Two Receivers

(Examples include CASMED FORE-SIGHT® and Somanetics INVOS®)



## 3) Third Generation

Two Emitters / Two Receivers

Nonin 

### EQUANOX Technology Used in Cerebral Applications

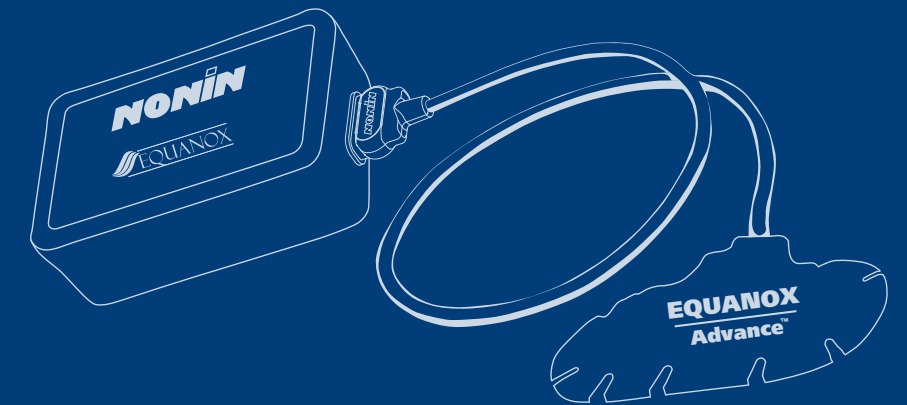
Unique to the EQUANOX technology, dual emitters alternately create pairs of reflected light paths through surface tissue to the shallow receiver and through the cerebral cortex to the far receiver. The system algorithm first uses the dual emitter architecture to remove surface effects that modulate light amplitude and then uses the shallow path to remove the surface tissue components from the deep path signals—resulting in a cerebral cortex measurement that is unaffected by intervening tissue or surface effects.





It starts with  
**EQUANOX™**  
sensor technology

- **Ambient light tolerance<sup>1</sup>** – No need to cover the sensor with shields
- **Thin cables with optimized placement** – Thin cables attached at the center of the sensor make it easy to place sensors evenly
- **Pliable foam material** – Prevents sensor lifting for maximized performance
- **Interference tolerant** – Shielded for use in a wide variety of settings



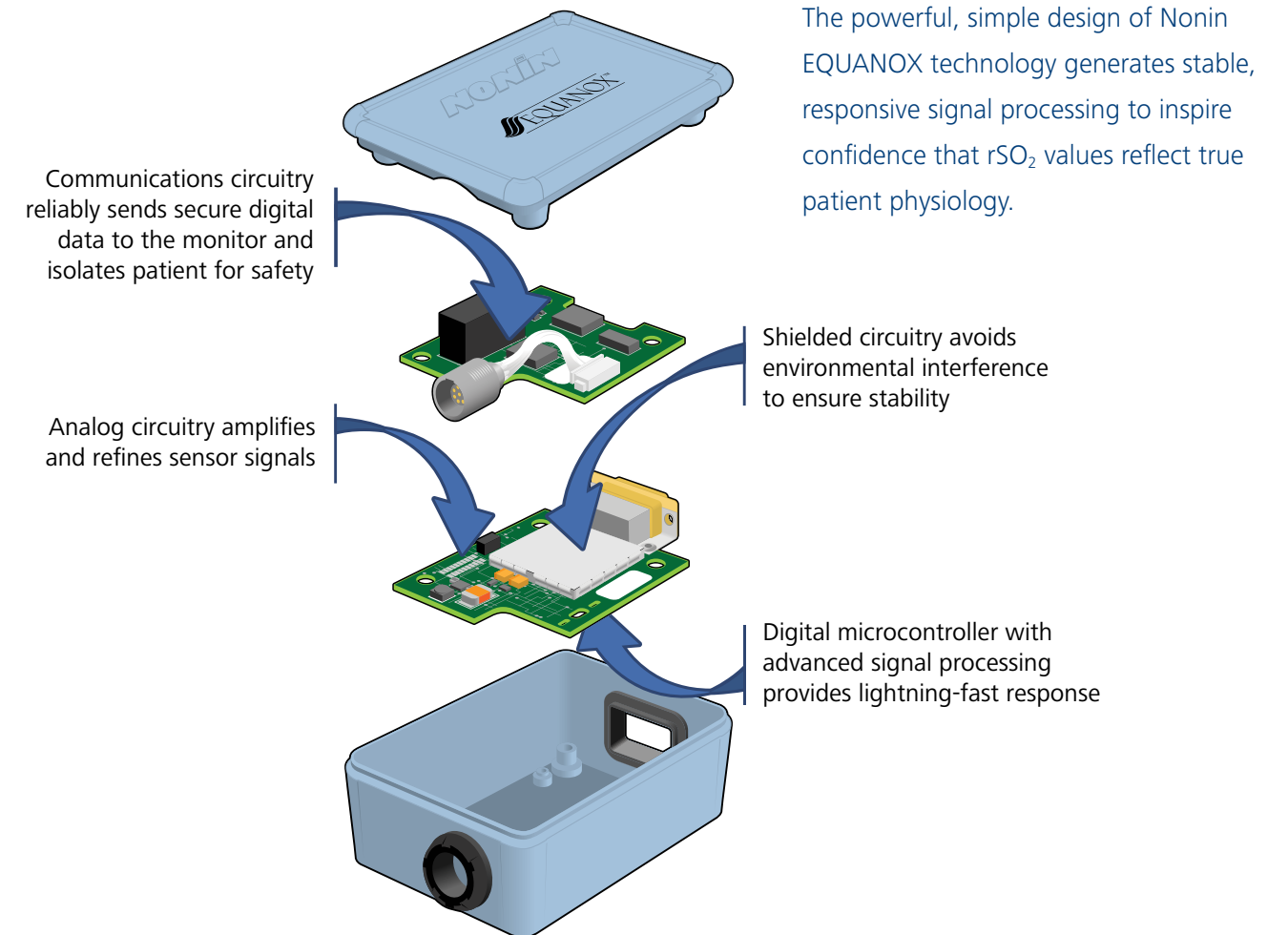
# Accurate in a wide range of patients

in a wide range of settings

## Proven Accuracy for Appropriate Clinical Action

For real-time cerebral injury protection, the EQUANOX 7600 System delivers stable, industry-leading accurate rSO<sub>2</sub> measurements throughout the peri-operative period. Advanced signal processing and superior sensor architecture eliminates interference for consistently accurate measurements you can rely on.

- **Improved Outcomes** – Detect dangerous drops in regional oxygenation as they happen. Dependable readings immediately alert the clinical team to a potential need for intervention.
- **Time-Saving Reliability** – With proven repeatability of  $\pm 2$  digits, there is no need to capture a new baseline after sensors have been moved or changed—resulting in maximum convenience and time savings.<sup>ii</sup>

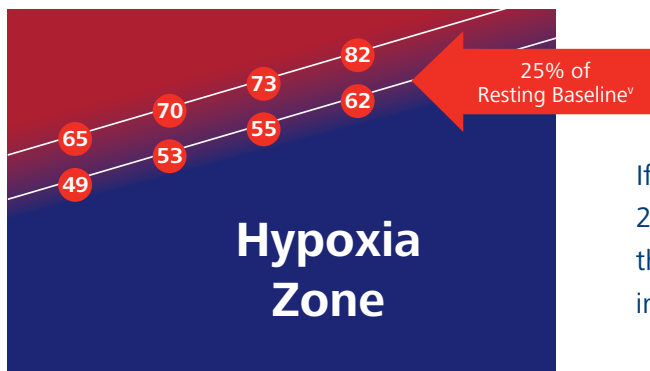


Choose from the EQUANOX Classic™ three-wavelength sensor or the EQUANOX Advance™ four-wavelength sensor



EQUANOX Classic™ Sensor, Model 8000CA with DB9 connector

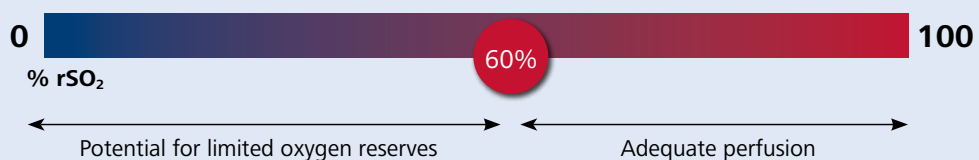
Cerebral patient monitoring, using EQUANOX Classic™ Sensor  
rSO<sub>2</sub> readings with the three-wavelength line rSO<sub>2</sub> Clinical Range (%)



■ Adequate Perfusion ■ Limited O<sub>2</sub> Reserves

If rSO<sub>2</sub> saturation falls 25 percent below baseline, then a clinician may consider intervention justified.<sup>v</sup>

Cerebral patient monitoring, using EQUANOX Advance™ Sensor  
rSO<sub>2</sub> readings with the four-wavelength line rSO<sub>2</sub> Clinical Range (%)

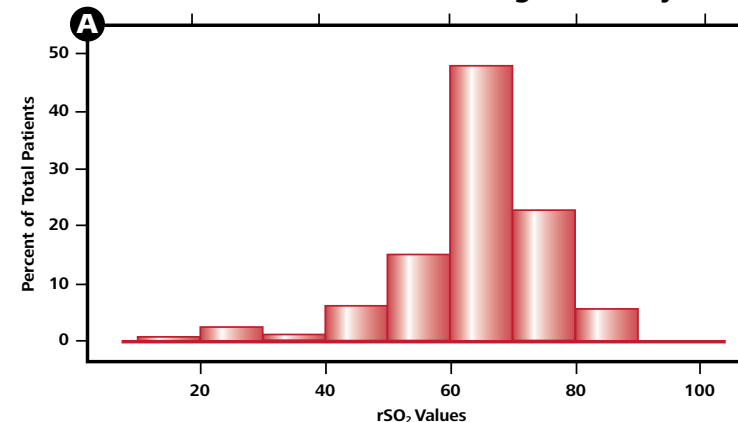


EQUANOX Advance™ Sensor, Model 8004CA with mini-connector

- Absolute %rSO<sub>2</sub> is a reliable indicator of available oxygen reserves<sup>vi</sup>
- Healthy patients have a resting baseline %rSO<sub>2</sub> of 60 or higher<sup>vi</sup>
- If %rSO<sub>2</sub> falls below 60 percent, a patient is potentially functioning with limited oxygen reserves; at this point a clinician may consider intervention justified<sup>vi</sup>

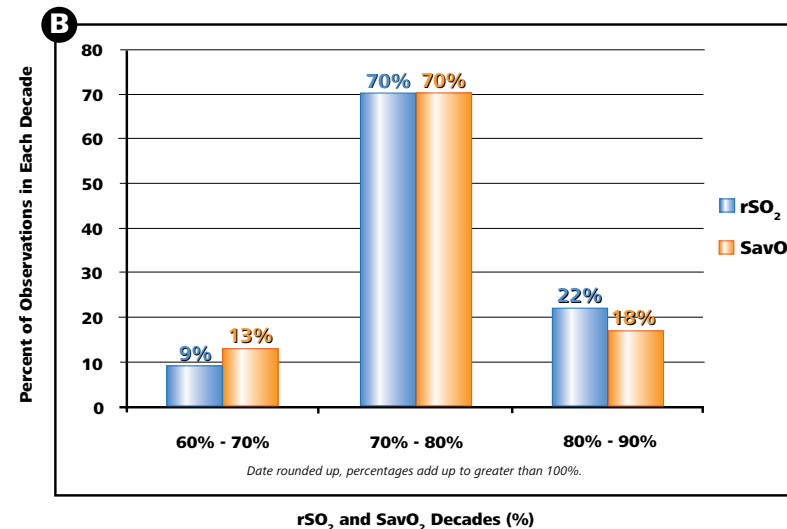
# The best just got better

Conventional NIRS Trending Variability<sup>xv</sup>



Compared to traditional NIRS trending technology, EQUANOX Advance is absolute, providing enhanced accuracy in rSO<sub>2</sub> measurements on all patients, regardless of weight or skin color<sup>xiv</sup>...no more guessing or over-treatment if patients do not read, or read inaccurately. In the histograms **A** and **B** (at left), conventional trending technology is in graph **A** and EQUANOX Advance is in graph **B**. Graph **B** represents the general alignment of data observations of both EQUANOX Advance-reported rSO<sub>2</sub> values (blue) and invasive blood-draw-derived SavO<sub>2</sub> values (orange) at room air.<sup>xiv,xv</sup>

EQUANOX Advance rSO<sub>2</sub> Values Aligned with SavO<sub>2</sub><sup>i</sup>





# Available options



Actual size:  
305 mm (12.0") W x  
180 mm (7.2") H x  
130 mm (5.0") D



**Display Monitor:**  
Displays up to 4 channels  
of rSO<sub>2</sub> measurement



**Trunk Cable:**  
Choice of 1-channel,  
2-channel or 4-channel

**Oximetry Pod:**  
DB9 connector (trending)



**Oximetry Pod:**  
mini connector (absolute)

**EQUANOX Classic™**  
three-wavelength sensor



**EQUANOX Advance™**  
four-wavelength sensor

# See the difference



**Nonin Medical®**  
Model 7600 Regional  
Oximeter System



**Somanetics®**  
INVOS® System



**CASMED®**  
FORE-SIGHT®  
Oximeter

Channels and Wavelengths			
Max Channels	4	4	2
Wavelengths	3 - 4	2	4
Monitor Specifics			
Weight	2 lbs. / 900 g.	14 lbs. / 6.85 kg.	14 lbs. / 6.85 kg.
Battery life	3 hour	20 minutes	1.5 hour
Battery designs	Lithium ion	Lead-acid	Lead-acid
Battery re-charge times	2.5 hours	24 hours	16.5 hours
Instant reading	Yes	No (requires signal strength detection)	No (requires setup before sensor reading)
Operational Parameters			
Range of SpO <sub>2</sub>	0-100%	15-95%	0-99%
Refresh rate	1.5 seconds	5-6 seconds	2 seconds
Sensor Specifics			
Cerebral indications	Trending, Absolute	Trending only	Absolute
Somatic indications	Yes*	Yes	Yes
Tolerant to ambient light	Yes	No	No
Maintenance			
Annual required maintenance costs	No periodic maintenance required†	Fuses, CPU Maintenance, Battery Replacement (estimated 7.4% of acquisition cost) <sup>xiii</sup>	Fuses, Fan Cleanings, Battery Replacement (estimated 7.4% of acquisition cost) <sup>xiii</sup>
Weekly cleanings	No	Yes	Yes
Warranty Comparisons			
Monitor warranty	3 years	12 months	12 months

†EQUANOX Model 7600 User's Manual  
\*For use with the Model 8004CA Sensor Only

# Nonin Medical

## The Inventor of Fingertip Pulse Oximetry and an Innovator in NIRS-based Signal Processing

Nonin Medical, Inc. invented fingertip pulse oximetry with its introduction of the Onyx® 9500. With 25 years of signal processing and sensor design expertise using near-infrared spectroscopy (NIRS), Nonin's pulse oximetry and regional oximetry systems enable clinicians to quickly and accurately monitor patients in the widest range of settings—even in the presence of low perfusion, motion and other challenging conditions.



The Onyx® II, Model 9560, is the world's first Continua™ certified fingertip pulse oximeter with Bluetooth® wireless technology.



Nonin Medical was founded in 1986 by four engineers who launched the company from a basement. One of those engineers, Philip Isaacson, is Nonin's Chief Technology Officer today.



Nonin Medical Founder and Chief Technology Officer, Philip Isaacson

Nonin Medical derives its name from the founders' commitment to developing *noninvasive* physiological monitoring solutions that simplify healthcare delivery, reduce costs and enable people to live their lives to the fullest.

The company's clinically proven PureSAT® technology—which provides signal processing speed, stability, and the ability to uniquely filter out artifact interference—provides confidence to millions of clinicians worldwide and remains the hallmark of a Nonin oximeter today.



Nonin Medical's Onyx® II, Model 9560 fingertip pulse oximeter with Bluetooth® wireless technology (circled, above) monitors the vital signs of miner Jorge Galleguillos during his dramatic rescue from a collapsed Chilean copper mine. Nonin Medical invented the world's first fingertip and wireless fingertip pulse oximeters.

*Photo: Courtesy of CNN*