High quality Pulse Oximeters for integrated oxygen saturimetry during rest or stress testing

Application

- Pneumology
- Cardiology
- Sport Medicine
- Home care
- Intensive Care

Related Products

- Pony FX, Spiropalm, Spiropalm 6MWT
- Quark PFT, Quark Spiro
- Quark CPET
- K4b2
- Fitmate MED

Options

- Full range of oximeters and sensors for different patient applications
- Small, lightweight and portable technology
- Low power draw (60 mW)
- Accurate performance in challenging monitoring environments at critical SpO₂ levels
- Intelligent pulse-by-pulse filtering

Digital pulse oximetry capabilities can be easily integrated with COSMED systems for the measurement of oxygen saturation during rest or during exercise. Based on Nonin technology, whose signal processing technology offers the highest quality standards on the market today, two models of oximeters are available depending on different patient application and mode of use:

- ipod: combines the oximeter and sensor in one self-contained unit. Ideal for spot-checking SpO₂ of adult patients;
- Xpod: the oximeter is integrated in the cable and can be attached to a broad range of accurate and dependable sensors (finger, earlobe and forehead) for different patient applications.

Both solutions ensure full performance oximetry with very low power consumption (as low as 29 mW), thus providing an energy-efficient solution for longer run time. Scientifically tested high-intensity LEDs guarantee accuracy also at critical SpO₂ levels.

Both ipod and Xpod rely on digital processing technology, which analyses the entire plethysmographic waveform. It identifies the best and most reliable pulse signals on a pulse-by-pulse basis, resulting in an extremely quick response time to physiologic changes.

Intelligent pulse-by-pulse filtering allows precise oximetry measurements, even in presence of motion, low perfusion or other challenging conditions. Variations in readings from patient-to-patient and sensor-to-sensor, due to impure sensor light emissions, are also eliminated. Accuracy is not degraded due to skin pigmentation, guaranteeing low bias and standard deviation.
**Technical Specification**

**Available Models**
- Xpod
- ipod

<table>
<thead>
<tr>
<th>Model</th>
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<th>Xpod</th>
<th>ipod</th>
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<tr>
<td>Pony FX, Spiripalm, Spiripalm 6MWT</td>
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**Main Functions**

**Oxygen Saturation Range**
- Xpod: 0 to 100%
- ipod: 0 to 100%

**Pulse Rate Range (BPM)**
- Xpod: 18 - 321
- ipod: 18 - 300

**Wavelengths and Output Power**
- Red (nanometers@mW): 660@0.8 910@1.2
- Infrared (nanometers@mW): 925@1.2

**SpO₂ Accuracy (70 - 100%)(±1 SD)**
- No motion (Adults): ± 2 digits
- Motion (Adults): ± 3 digits
- Low Perfusion (Adults): ± 3 digits

**Heart Rate Accuracy**
- No motion: 18-300 BPM (adults) ± 3 digits
- Motion: 40-240 BPM (adults) ± 5 digits
- Low Perfusion: 40-340 BPM (adults) ± 3 digits

**Hardware**

**Size (mm):**
- Xpod: 53x20x15
- ipod: 32x32x51

**Weight (gr):**
- Xpod: 75
- ipod: 100

**Temperature (operating):**
- Xpod: 0 °- 50°C
- ipod: 0 °- 50°C

**Humidity (operating):**
- Xpod: 10-90%
- ipod: 10-90%

**Power Draw:**
- Xpod: 60 mW
- ipod: 60 mW

**I/O Signals (input):**
- Xpod: 0-5.0 VDC
- ipod: 2-6 VDC

**I/O Signals (Output):**
- Xpod: 0-5.0 VDC
- ipod: 0-5.0 VDC

**Data Formats**

For data logging (3 bytes of data sent once per second):
- SpO₂, heart rate, out of track, marginal perfusion, artifact and sensor alarm

For Real-time Monitoring (5 bytes of data sent 75 times per second):
- Multiple SpO₂ and heart rate outputs, out of track, artifact, pulse indication, sensor disconnected, sensor alarm, software firmware revision level, and plethysmographic pulse waveform

**Safety & Quality Standards**

**Patient isolation:**
- IEC 60601-1 Dielectric withstand

**Ruggedness:**
- Shock: IEC 60068-2-27
- Vibration Sinusoidal: IEC 60068-2-6
- Vibration Random: IEC 60068-2-64

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Wide range of sensors available for Xpod model: earlobe, re-reflectance (forehead) and finger

A significant drop of SpO₂ during exercise may explain an exercise intolerance for inefficient pulmonary/blood gas exchange.