NIRO®-200NX

Near infrared oxygenation monitor C10448

HAMAMATSU

PHOTON IS OUR BUSINESS

A highly functional tissue oxygenation monitor to meet a variety of needs

- Continuous, non-invasive measurement of tissue oxygenation using low light.
- Easy operation: simply attach the reusable probes and press the start button.
- Useful in a wide variety of applications, from management of brain oxygenation in operating rooms to clinical studies related to brain function, brain metabolism, muscle function, etc.

Advantages of measuring with the NIRO-200NX

- **Measurement using both MBL (ΔO_2Hb, ΔHHb, ΔcHb) and SRS (TOI and THI) methods, running independently of each other**
- **Combination of MBL and SRS can provide local haemodynamic information such as changes in oxygen consumption or vasomotor activities, and provides increased data reliability.**
- **Attachments are reusable.**

Applications:

Monitoring brain oxygenation during heart surgery and other procedures

Patient monitoring in emergency rooms

Patient monitoring in ICUs, CCUs, and NICUs

Clinical studies related to oxygenation levels and blood metabolism in the brain

Studies of muscle tissue oxygenation for sports medicine, rehabilitation and similar applications

Can be used on emergency carts

Can be used on rescue helicopters

Highly improved features for clinical use

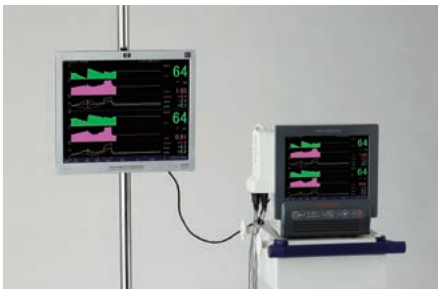
Improved features:

Compact and lightweight

Half the size of the previous NIRO-200, providing the same great performance while making it much easier to use with an emergency cart or in the operating theatre.

External monitor output

View data on an external monitor at the same time, useful for anaesthetists and perfusionists.



Input of event marks from external devices

Ability to input event marks externally, useful for analyzing the results of pump control and for research purposes.

Equipped with battery

Useful in case of power failure or during patient transfer after an operation.

Past data retrievable

Data stored in the NIRO-200NX can be retrieved for purposes such as patient counselling or research.

Touch panel display

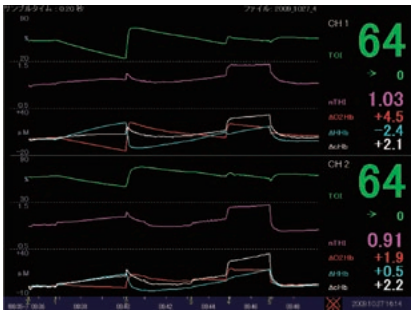
The machine can be operated by touching the screen.

Data storage to USB memory devices

Data may be saved to a USB memory device, useful for analyzing the results of pump control.

Basic features of the NIRO-200NX

The NIRO-200NX is a tissue oxygenation monitor that uses near infrared spectroscopy. The unit uses safe, low light to measure the Tissue Oxygenation Index (TOI), showing the oxygen saturation level, the Normalised Tissue Haemoglobin Index (nTHI), showing the percentage change in the amount of initial haemoglobin, as well as changes in concentration of oxygenated haemoglobin (ΔO_2Hb), deoxygenated haemoglobin (ΔHHb), and total haemoglobin (ΔcHb), all in real time.



- **Measure data simultaneously in two locations (two channels installed)**
- **Measure concentration changes in oxygenated, deoxygenated and total haemoglobin**
- **Easy operation by simply pressing the start button**
- **Transfer numerical value data to a personal computer**
- **Safety and high reliability**

NIRO-200NX

Specification:

Measurement items	Tissue oxygenation index, TOI (%) Normalized tissue hemoglobin index, nTHI (absolute value in arbitrary unit) Oxygenated hemoglobin change, ΔO_2Hb (μmol/L) Deoxygenated hemoglobin change, ΔHHb (μmol/L) Total hemoglobin change, ΔcHb (μmol/L)
Sample interval	0.05 s, 0.2 s, 0.5 s, 1 s, 2 s, 5 s, 10 s, 20 s, 30 s
Light source	LED (735 nm, 810 nm, 850 nm: nominal values)
Output power	Less than 2 mW
Light detector	Photodiode
Measurement method	SRS method (Spatially Resolved Spectroscopy) and MBL method (Modified Beer-Lambert)
Data memory	Internal backup memory for more than 10 data files. (Maximum number of data samples for each file is 50 000.)
Saving data to a USB device	Measured data can be saved to an external USB memory device using the USB connector.
Output signal	Digital output (RS-232C) / Analog output / Philips Vuelink format
Measurement probes	Approx. 2.5 m cable length (for emission and detection probes)
Battery	Operating time of about 30 min. (fully charged)
External Event Input	TTL, "L" with a duration longer than 100 ms
Display Unit	Size: approx. 264 mm(W) × 279 mm(H) × 190 mm(D) Weight: approx. 6.0 kg
AMP Unit	Size: 91 mm(W) × 55 mm(H) × 156 mm(D) Weight: approx. 0.7 kg Cable length: approx. 4 m
Power consumption	Less than 90 VA

Standard configuration:

· Display Unit (DU) 1
· AMP Unit (AU) 1
· Emission probe (A10959) 2
· Detection probe (A10962) 2
· Probe holder S type (A10963) 2
· Probe holder L type (A10965) 2
· Double-sided adhesive tape for S type (A10967) ..... 1 bag
· Double-sided adhesive tape for L type (A10968) ..... 1 bag
· Cable clip (A11047) ..... 1 bag
· Power supply cord 1
· Manual 1

Options:

· Data download software, Windows compatible (U10898)

The data can be displayed and analyzed on a personal computer as well as printed out as text data from a personal computer.

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