

ant neuro

inspiring technology

nëo™

simplify neonatal care



What is a preterm neonate?

Preterm refers to a baby born before 37 weeks of pregnancy have been completed. Normally, a pregnancy lasts about 40 weeks.



Why monitoring brain activities of preterm neonates?

The fundamental difference between preterm infants and all other patient groups is that the preterm brain is in a very active stage of development. Most often with risks for seizure, oxygen deprivation or hemorrhages.



Why is monitoring pre-term neonates important?

10%

Of new babies in the EU are born preterm...
and increasing

Murphy et al. 2015

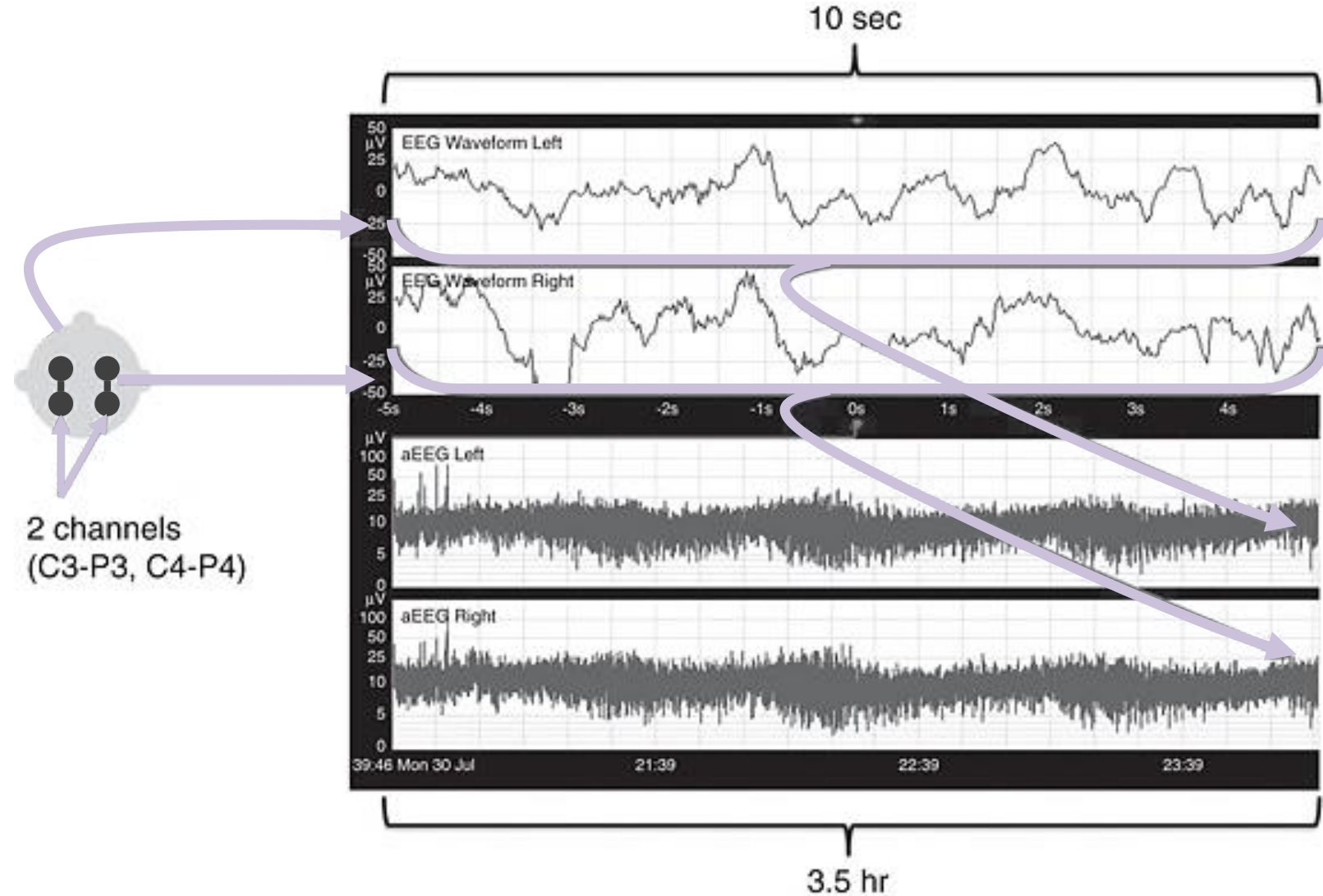
Preterm birth is now **the second leading cause of death in children under 5 years of age** and the single most important cause of death in the critical first month of life.

Prof. Dominique Haumont
European Foundation for the Care of Newborn Infants

What is aEEG?

Amplitude integrated and time-compressed EEG in order to monitor longterm brain activities and pathologies.

The most used method for longterm functional neonate monitoring in NICU.



What is aEEG?

normal

Continuous Normal Voltage

Lower margin $> 5\mu\text{V}$

Upper margin $> 10\mu\text{V}$

Discontinuous Normal Voltage

Lower margin $< 5\mu\text{V}$

Upper margin $> 10\mu\text{V}$

Burst Suppression

Lower margin $< 5\mu\text{V}$

Upper margin $> 10\mu\text{V}$

Status Epilepticus

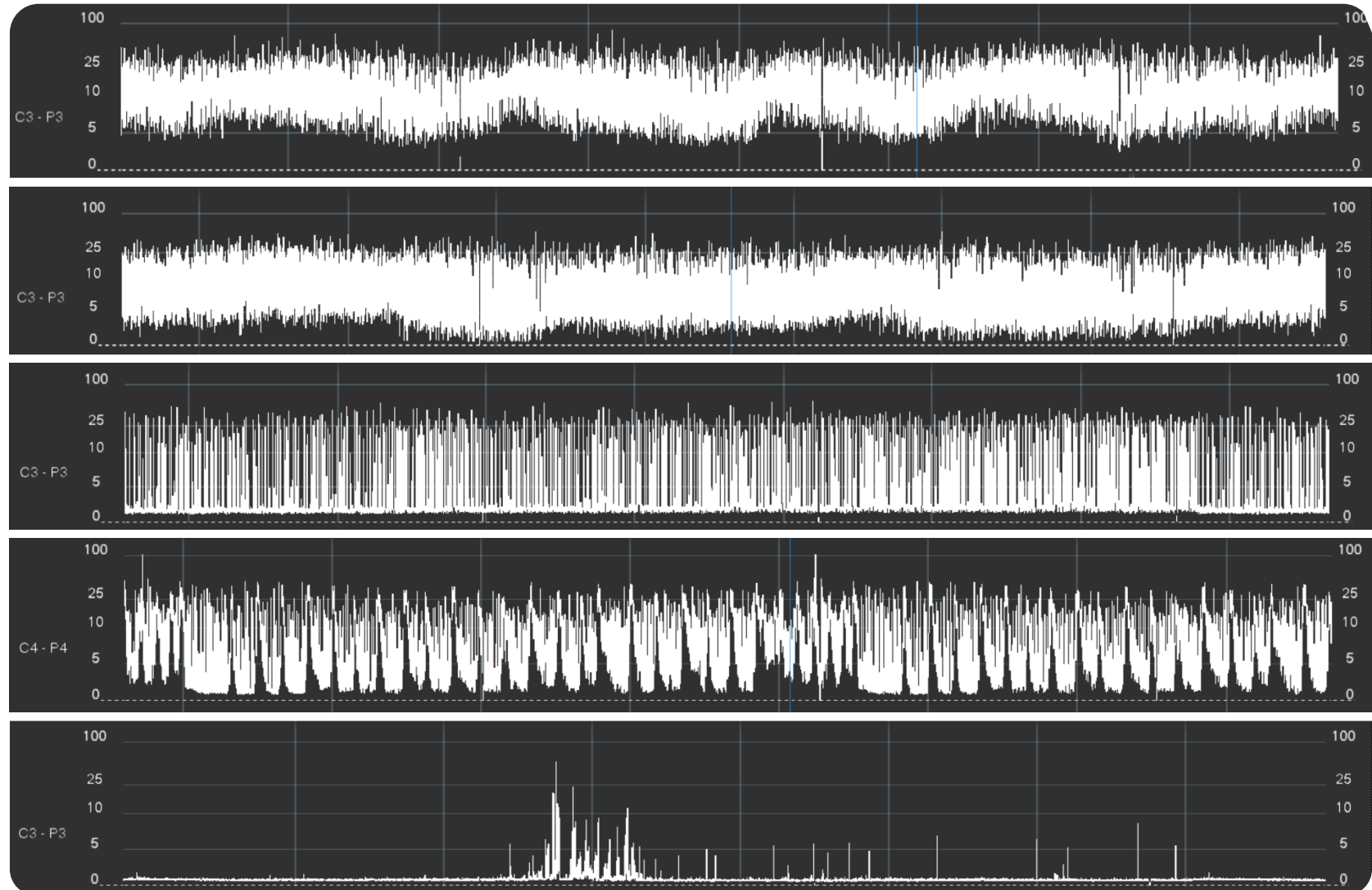
Spike patterns

Flat Trace

Lower margin $< 5\mu\text{V}$

Upper margin $< 10\mu\text{V}$

abnormal



Inter Burst Interval (IBI)

Duration between two consecutive EEG bursts

- A robust parameter for grading Hypoxic Ischemic Encephalopathy (HIE).
- A reliable index of the degree of brain maturity.

Burst Suppression Ratio (BSR)

Ratio between high and low brain activity

















- Hallmark for early myoclonic encephalopathy and early infantile epileptic encephalopathy.
- Associated with severe central nervous system disorders, e.g., perinatal asphyxia, inborn errors of metabolism, acquired or congenital infection, dysgenesis.

The customers and users of neonatal monitoring



- **Neonatologists in NICU**
 - Traditional customer for low-density neuro-monitor
 - Primary care deliverer
 - Main interpreter of *aEEG*
- **Pediatric neurologists in PICU**
 - Typically not interested in anything below 8 channels
 - Called in for expert opinion
 - Main interpreter of *cEEG*
- **Nursing staff**
 - Important stakeholder, as this is primary user of system
 - Main interpreter of indicators
- **Hospital Procurement**
 - Decision maker for replacing old equipment

Gaps in the market

	Neonatologist	Neurologist	Nursing Staff	Procurement
OBM, Natus <ul style="list-style-type: none"> Simple but outdated interface No value for neurologist High price 				
Nicolet Monitor, Natus <ul style="list-style-type: none"> "Dumbed down" clinical EEG system Too complex user interface for neonatologists 				
Unique CFM, Inspiration Healthcare <ul style="list-style-type: none"> Only 1 to 2 channels of aEEG No value for neurologist 				
BrainTrend, MT MonitorTechnik <ul style="list-style-type: none"> Only 1 to 2 channels of aEEG No value for neurologist Low Usability 				

nëo hardware



HD monitor

15" touchscreen monitor
visualizes aEEG patterns
accurately with great detail

Integrated power supply

cabling and medical power
supply integrated into the
device for easier cable
management

Optimized for servicing and maintenance

Open amplifier integration for
easy servicing and
maintenance



Flexible mounting

Mount on medical cart,
wall/ceiling, or bed-side table to
save valuable space in NICU

Designed for NICU

Sturdy and sleek, mobile,
minimal cabling, compatible
with other modalities, and
hardware-side noise reduction

Research grade amplifier

Research grade EEG amplifier
with high input impedance for
best signal quality



nëo accessories



Access to caps

With the research grade amplifier, the **nëo** allows the use of specially fitted caps. Competing products do not have sufficient input impedance to deal with caps.



Access to single lead electrodes

Color-coded sockets for the touchproof break-out adapter for easy channel allocation.

nëo monitor software



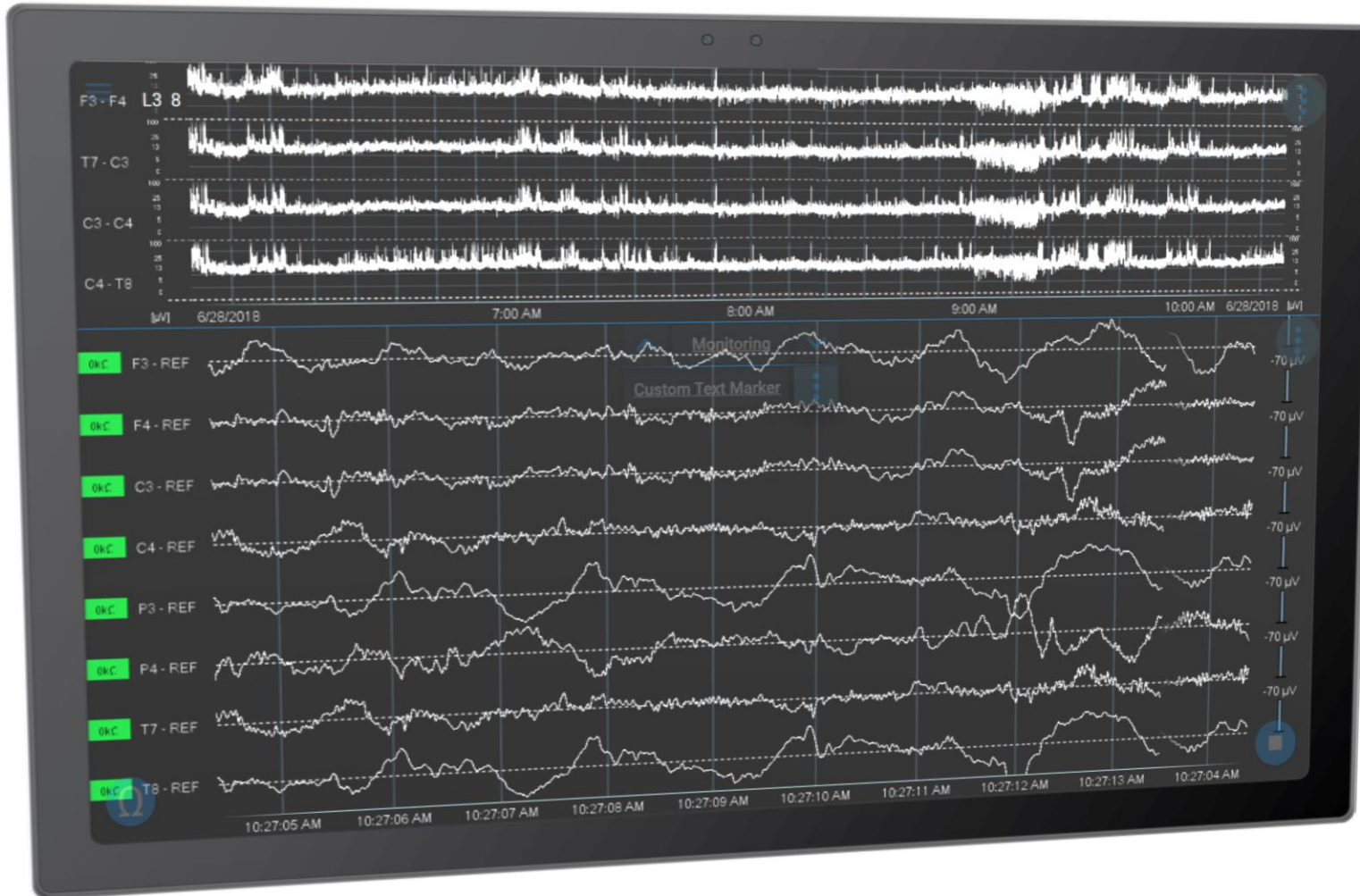
- **Simple user interface**

The user interface is clean and simple, to allow the bed-side staff to operate it.

The software guides the care-taker with a step-by-step monitoring workflow.

Only 2 clicks from setting up to monitoring.

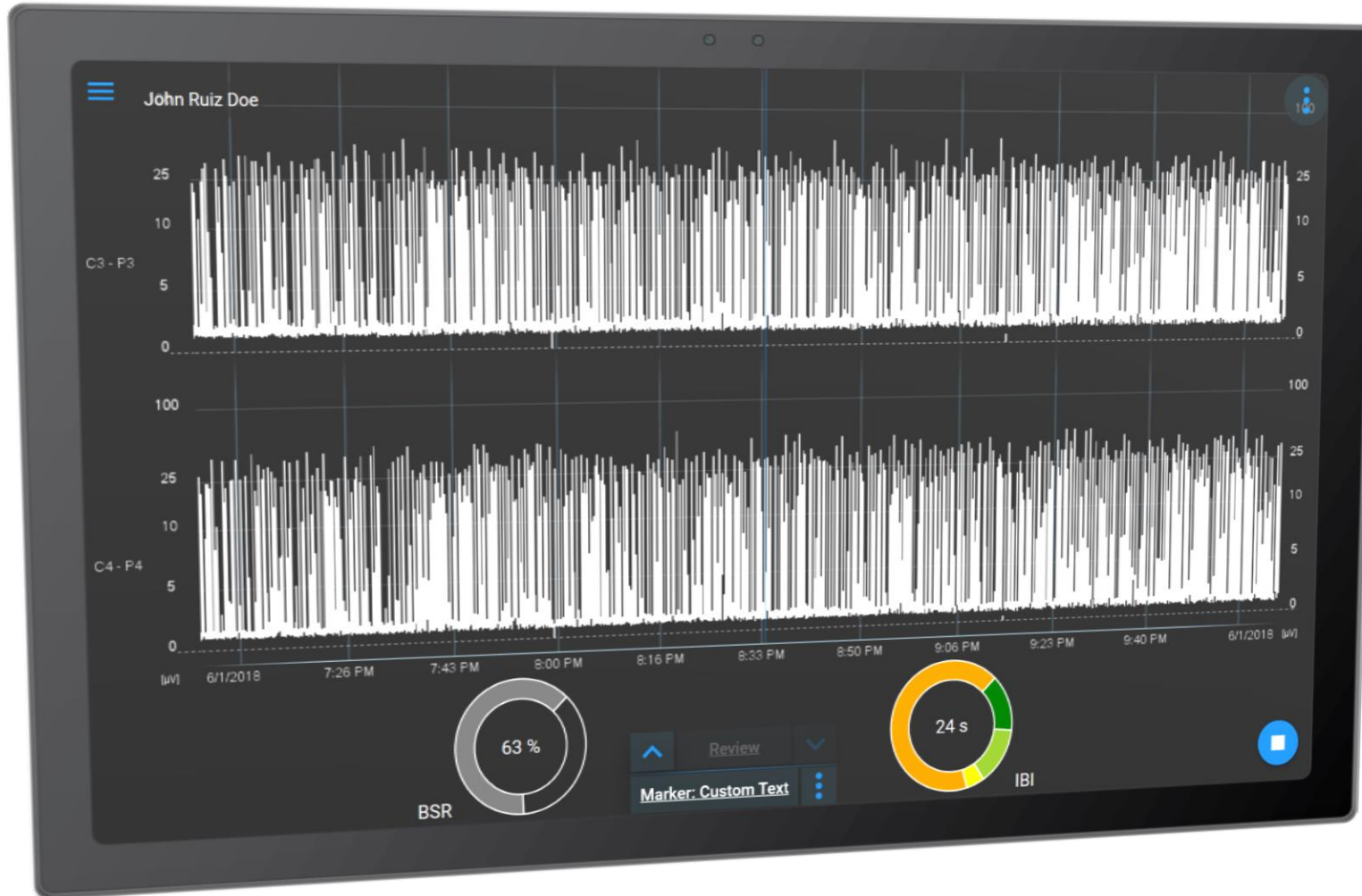
nëo monitor software



- **Double value**
With 8-channel cEEG it provides diagnostics value to (pediatric) neurology, and an extended coverage for better visual seizure detection.

The view can be easily adapted with a finger swipe, to only display the most relevant info to the respective clinician.

nëo monitor software























- **Diagnostics support**

Indicators for Inter-Burst-Interval (IBI), Burst Suppression Ratio (BSR), and seizures help the bedside personnel make informed decisions about interventions.

The software notifies the personnel about abnormal recording with a visual warning.

Competitive advantage of nēo

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nēo, ANT Neuro <ul style="list-style-type: none"> Up to 8-referential channel coverage for doubled value Access to reusable EEG caps Easy and intuitive workflow Online BSR and IBI assesement Competitive pricing 				

Summary of Benefits



nēo for Clinical use of aEEG monitoring

- Monitor background aEEG patterns
- Detection of subclinical / non-convulsive seizures
- Evaluate brain maturity and recovery
- Monitor the effects and efficiency of anti-convulsive drugs
- Screen patients for neuroprotective interventions
- Predict neurodevelopmental outcome following perinatal HIE or surgery
- Assess sleep-wake cycling

Easy interpretation for every nICU professional

- Simultaneous recording of aEEG and continuous EEG
 - Online Burst Suppression Ratio and Inter Burst Interval display
 - Up to 8 referential channels EEG with actively shielded EEG caps
 - Quick start of monitoring and data sharing
 - Ready inspection of recorded data via online/offline review
 - Quick access to pre-defined and custom annotations in both recording/review modes
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Product Order Range



Code	nêo™
ES-820	1x nêo monitor software 1x EE-411 eego mini amplifier 1x nêo all-in-one pc 1x nêo cover plate 1x User manual 1x Safety instructions

Code	Compatible accessories
XC-810	Break-out adapter with touch proof sockets
XC-820	Medical cart (<i>Vesa compatible</i>)
XC-821.R	Medical monitor arm for wall norm rails (<i>Vesa compatible</i>)
XC-821.P	Medical monitor arm for poles (<i>Vesa compatible</i>)
XC-822	Medical table stand (<i>Vesa compatible</i>)

Code	Electrodes (<i>in different colors</i>)
XE-382	Single lead cup electrode Au plated with touch proof connector
XE-385.C	Single lead ring electrode Ag/AgCl with touch proof connector
XE-386	Subcutaneous steel needle electrodes
XE-165	Hydrogel Pads

Code	Neonatal EEG caps (<i>in different sizes</i>)
CA-420.s1	EEG cap, 2 electrodes plus GND and REF, P3, P4, shielded, HD-C50pin connector
CA-421.s1	EEG cap, 4 electrodes plus GND and REF, C3, C4, P3, P4, shielded, HD-C50pin connector
CA-422.s1	EEG cap, 8 electrodes plus GND and REF, F3, F4, C3, C4, P3, P4, T7, T8, shielded, HD-C50pin connector

Code	Consumables
XE-153	OneStep Cleargel 500g
XE-154	OneStep Cleargel 1000g
XE-155	OneStep Cleargel 4000g
XE-157	OneStep Cleargel 120g
XE-158	Ten20 conductive paste 114g
XE-377	Blunt syringe needles
XE-011	Single use syringe 10 ml

CE certified Class IIa, 2018



ant neuro
inspiring technology

inspiring technology for the human brain