langermedical

AVALANCHE® SI 2

The Allrounder
Multimodal
8-channel neuromonitor

The art
of neuromonitoring

SI –

simple & intelligent

- *Multimodal neuromonitoring system – with optional further applications*
- *Reliable connectivity and high data security with Windows 10 IoT*
- *Latest touch-screen technology with hygiene-optimised glass front*
- *Crisp visualisation and brilliant colours in the OR*
- *Expanded documentation – trends included in report*
- *Painless integration with the hospital information system over LAN and Wi-Fi*

Countless surgeons, anaesthesiologists, and OR nurses around the globe have relied on our proven **AVALANCHE®** neuromonitors for over 20 years. Our successful **AVALANCHE® SI 2** model is a winner in every respect. Equipped with the latest technology, it is fast, powerful and well-prepared for the digital future in your OR.

The smooth glass front matches the overall modern appearance and highlights the rich colours of the new screen display. Our **AVALANCHE® SI 2** is highly intuitive to operate – exactly what you would expect from a state-of-the-art device. It is powered by Microsoft's **Windows 10 IoT** operating system – making it straightforward to interface the neuromonitor with your hospital information system.

MODULAR

Modular design
for a wide range of applications

AVALANCHE® neuromonitors have always worked reliably and been easy to operate. Their rigorously modular design is compelling and allows use in many surgical disciplines. More applications can be added later.

Our **AVALANCHE®** **SI 2** can be used to locate and functionally check motor nerves, sensory nerves or cerebral structures during an operation. All necessary stimulators are already integrated into the system. The appropriate electrodes for stimulation and signal transmission can be found in our accessories catalogue.

***Thyroid** Surgery*

***ENT** Surgery*

***Carotid** Surgery*

***Spine** Surgery*

The art of neuromonitoring

AVALANCHE® SI 2

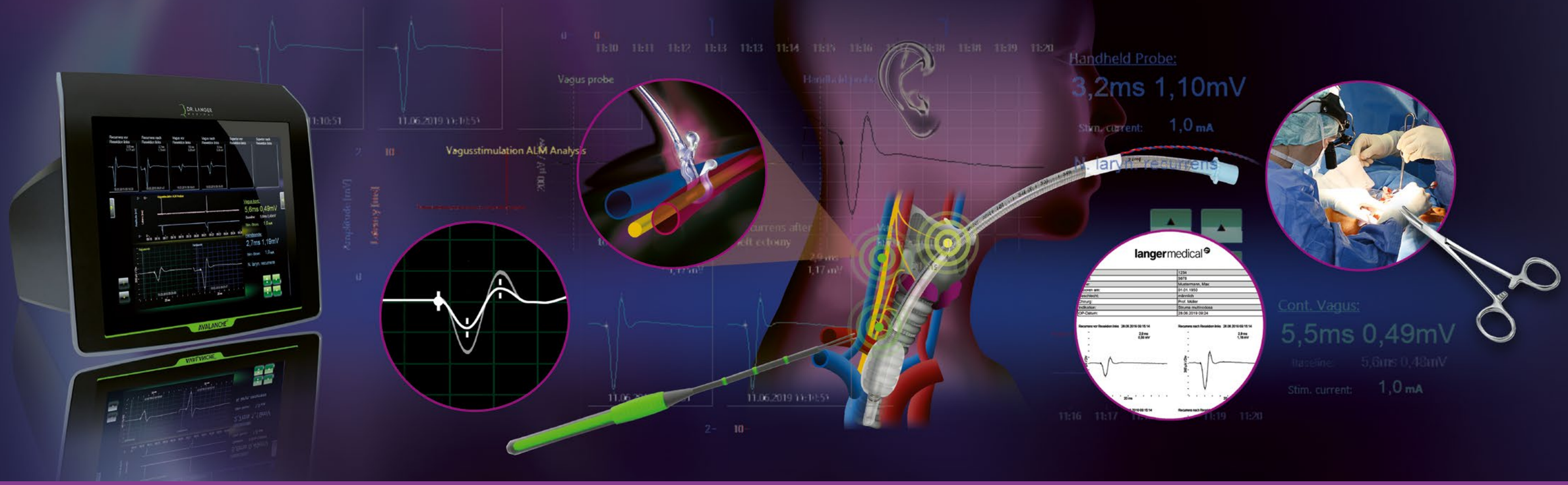
in Thyroid Surgery

Seamless recurrent nerve monitoring via continuous vagus nerve stimulation

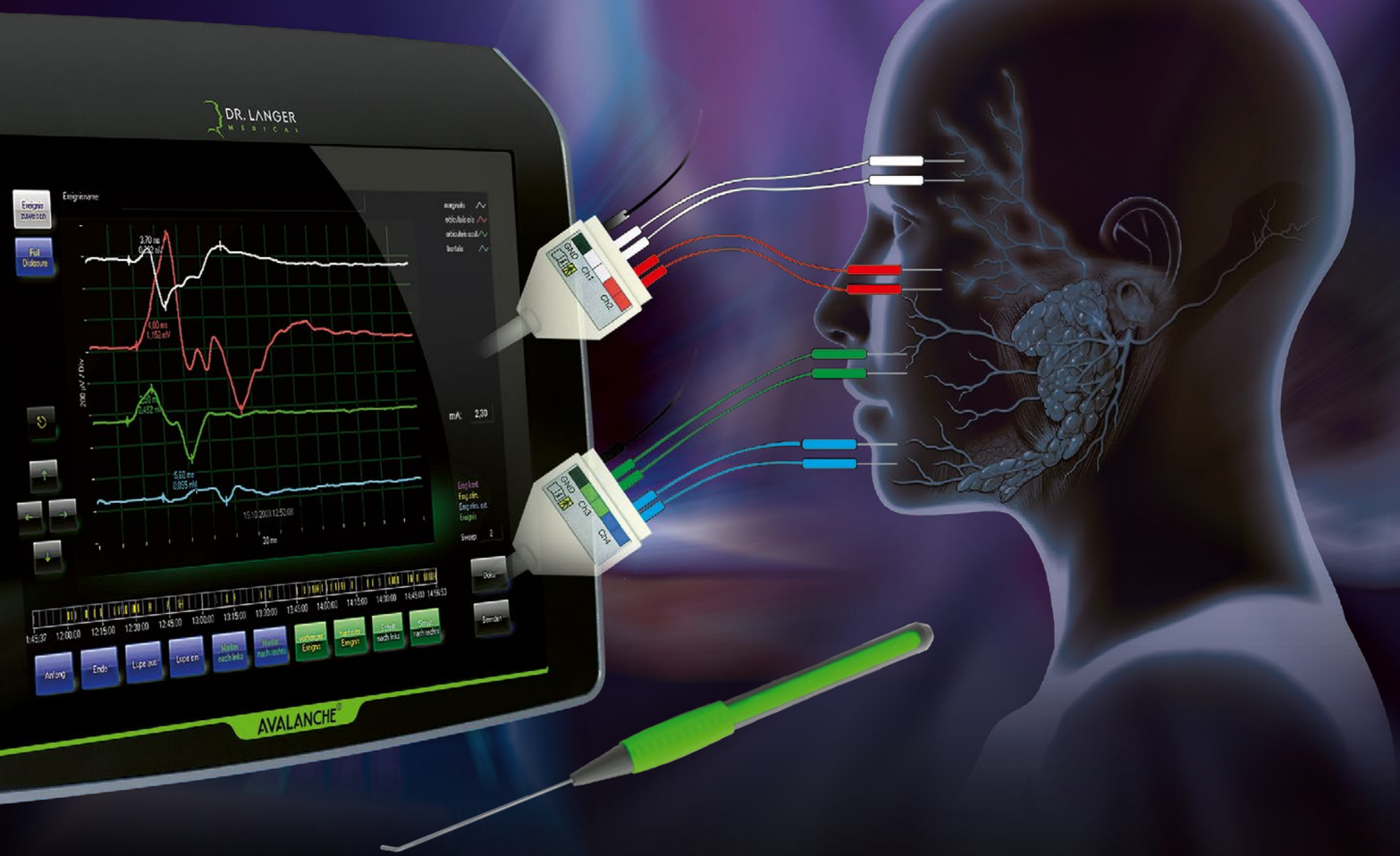
Functional integrity check of motor nerves

More than 25 years' experience – over 2,000 devices – nearly 50,000 operations every year. Thyroid surgery is our specialty and where most **AVALANCHE®** systems are used. We were inventors and pioneers of continuous neuromonitoring. Today, operating rooms wouldn't be the same without this method. The interaction of automatic vagus nerve stimulation – running continuously in the background – and situational manual stimulation at the surgical site makes recurrent nerve monitoring a seamless affair, and much safer than ever before. If the nerve function is at risk, the amplitude and latency change. Any signal changes are displayed for you on our large monitor.

We have also integrated a configurable, threshold-based acoustic warning into the **AVALANCHE®** SI 2. The optional trend display is also included on our report printout.



AVALANCHE® SI 2
in ENT Surgery



Localisation and functional integrity check for cranial motor nerves

Our **AVALANCHE®** SI 2 can handle many different ENT use cases – from nerve localization during parotidectomies or neck dissections to nerve lesions during acoustic neuroma resections all the way to cochlear implant insertions.

An electromyogram of up to 8 muscles responds instantly to the smallest nervous irritations. One glance at the large screen with its brilliant colour reproduction will tell you which nerve was irritated. To be completely sure, you can use our stimulation probes and check for yourself. You will see a hard-to-miss action potential in the vicinity of nerves, giving you complete certainty. The cochlear nerve can be monitored with our integrated acoustic stimulator. This, along with the derived cortical AEP signals, provides vital information.

We supply you with all the accessories you need. Our needle electrodes are colour-coded to match the appearance of EMG signals on the screen. This avoids confusion.

AVALANCHE® SI 2
in Carotid Surgery

Lower risks with SEP measurement

Oxygen perfusion monitoring

Our **AVALANCHE®** SI 2 neuromonitors provide somatosensory evoked potentials - SEP for short - during TIVA. Based on critical changes in the measured SEP, you can recognise an impending lack of oxygen in good time in our carotid programme. If there is a change in amplitude and latency during the operation as a result of a reduction in oxygen, e.g. if the collateral blood flow through the contralateral carotid and vertebral arteries is insufficient, an intraluminal shunt must be inserted (selective shunting). Based on intraoperative monitoring in sedated patients, this occurs in around 15% of procedures [1].

The incidence of postoperative strokes is 4.4% with routine shunt insertion - but only 0.7% with selective shunting [2]. Our **AVALANCHE®** SI 2 neuromonitors have a multimodal design and can be used across all departments. If required, our system can be supplemented with additional application modules at any time.

[1] C. W. A. Pennekamp, F. L. Moll, and G. J. de Borst, 'The potential benefits and the role of cerebral monitoring in carotid endarterectomy,' Current opinion in anaesthesiology, vol. 24, no. 6, pp. 693-697, 2011, doi: 10.1097/ACO.0b013e32834c7aa1

[2] M. Dinkel, 'Functional, haemodynamic and metabolic neuromonitoring in carotid surgery. A clinical comparison of methods: Habilitation,' 1995.

AVALANCHE® SI 2 – PLUS X Award

Our slogan, ***the art of neuromonitoring***, has long underscored our vision for our product. We are particularly proud when independent experts duly honour our achievements.
Our **AVALANCHE®** SI 2 has been recognised and won the coveted **PLUS X Award** seal of approval in 4 categories at once:

- High Quality
- Design
- Ease of Use
- Functionality

The approach of the **PLUS X Award** is unique. Unlike numerous competitors that mainly understand themselves as design awards, the **PLUS X Award** takes a more nuanced approach. A highly regarded expert jury, consisting of various representatives of different industries, subject proposed products to a stringent review. As a result, the **PLUS X Award** quality seals not only set the standard for the best products but are also an unmistakeable sign for brand quality.

Langer Medical Accessories Highlights

Saxophone electrode

Continuous vagus nerve stimulation as pioneered by Professor Lamadé

It is soft, stands out for its design, and is easy to use. We have given it an optimal shape to adapt to the anatomical conditions of the vagus nerve.

Our **saxophone electrode** is one of the safest aids for continuously monitoring the recurrent nerve. An unbeatable team in combination with our **AVALANCHE® SI 2**. You will be warned before it is too late – at any time. Thanks to continuous stimulations, phases of uncertainty during preparation are a thing of the past. The electrode is positioned perfectly at the nerve and its atraumatic removal is an absolute asset. The two contacts for nerve stimulation are embedded – a unique design.

Stimulation probes

Direct stimulation of nerves and muscles

Compare our **stimulation probes** with those of others. Do you see the difference?

Our probe handles are ergonomically designed to minimise hand fatigue. They are easy to manoeuvre, so you can reach every part of the surgical site. With our monopolar or bipolar probes, you can clearly distinguish coarse and fine features. Our new blister packs are shaped to allow for quick removal of our sterile probes, even in stressful situations.

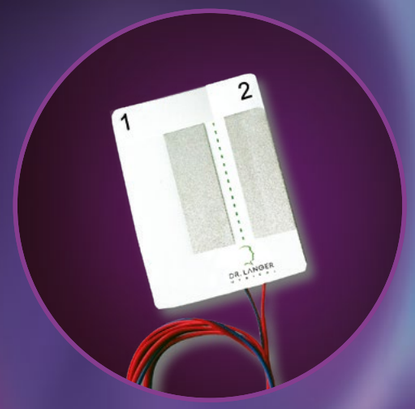
Another plus: the peel-off adhesive labels make documentation easier and faster, freeing up time that you can probably use more effectively elsewhere.

Electrode tube

EMG recording with standard or Woodbridge tube

No time for sticking on an electrode? Or does the proper placement of adhesive electrodes sometimes go wrong?

Then use our **tubes** with fully integrated electrodes. We can offer the perfect **electrode tube** in different sizes – in the standard or spiral version. The extra-large bilateral contact surfaces ensure a high level of position tolerance with reliable signal acquisition. By the way, did you know that signal quality depends on the size of the contact surfaces, not on their number? Our single-channel **tubes** only need two electrode surfaces, thus enabling a maximum size.



Tube electrode

Cost-effective alternative to the electrode tube

We have been making **tube electrodes** for nearly 20 years. Doing things yourself can save money – that's true here as well.

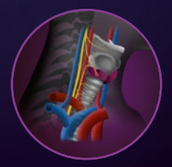
You can place the **tube electrode** on any endotracheal tube in only a few steps. To make it faster, every work step is clearly marked with a numbering system. We've even marked the optimal distance from the cuff. It doesn't get much easier! The two extra-large contact surfaces are only available with our single-channel electrode – for perfect signal quality during the entire surgery. The same electrode can be used for multiple tube diameters – for greater flexibility and cost savings.

AVALANCHE® SI 2

The Allrounder
Multimodal
8-channel neuromonitor

Simple – reliable – scalable

- *Functional integrity check of motor nerves in thyroid, ENT and maxillofacial surgeries*
- *Oxygen perfusion monitoring during carotid surgeries*



AVALANCHE® SI 2 – impressive modular concept with up to 8 measurement channels for use in multiple surgical disciplines. The operational design stands out for its easy handling. The hygiene-optimised design uses adhesive films for sterile applications in the OR.

AVALANCHE® PLUS

The Specialist
Multimodal
32-channel neuromonitor

A completely new approach to IONM

- *Brain surgery*
- *Spine surgery*

Superior assistance package:

- *Visual anatomy-based configuration*
- *LED-guided patient connection*
- *EMG / EP signal overview*

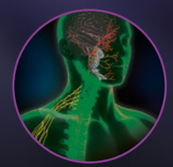
AVALANCHE® PLUS – a revolutionary IONM system that stands out for its clarity and intuitive operation. The hygiene-optimised design uses adhesive films for sterile applications in the OR.

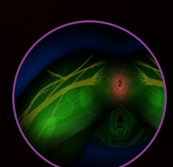
TWISTER® MM

The Compact
Multimodal
neurostimulator

for intraoperative nerve, muscle and cortex stimulation

- *Direct nerve stimulation*
- *Cortical mapping – speech monitoring*
- *PSARP*





Pre-defined user programs simplify the use of **TWISTER®** MM. Stimulation parameters can be changed directly on the touchscreen. The device design was optimised for surgical use. **TWISTER®** MM functions as a stand-alone device without any additional PC or laptop.

For further information about our full product range, please scan the QR code:

For nearly 30 years, our high-quality intraoperative neuromonitors have impressively demonstrated the art of neuromonitoring.

We are part of Brainlab

The Brainlab Companies:

Together we accelerate the digital transformation of healthcare and maximise synergies by pioneering an open healthcare dataverse together.

Our holistic data-driven ecosystem integrates medical devices, open platforms, data infrastructure and clinical education. Intelligent technologies allow us to enable personalized, automated and efficient treatments so that healthcare providers can prioritise sustainability while improving the lives of patients worldwide.

We cooperate intensively on scalable concepts across the digital patient journey from diagnosis to therapy, powering each Brainlab company to increase their potential while sharpening their core competencies in their areas of expertise.

Contributing to the Brainlab companies data-driven ecosystem

We are transforming healthtech

langermedical

We are neuromonitoring

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