

Diagnosics

Sleep Diagnostics Solutions for Every Need.



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Daytime sleepiness, a decline in performance and cardiovascular diseases can all result from disordered sleep. People who have trouble falling asleep or sleeping through the night are advised to consult their doctor. Potential causes of the problem can be ruled out with a review of the patient's medical history and examinations such as ECG, lung function tests and a chest x-ray. If Sleep-Disordered Breathing (SDB) is suspected, a nighttime examination with a mobile recording device (polygraphy) can take place in the patient's home. This examination might yield the most frequent SDB diagnosis of obstructive sleep apnea.

When a patient is referred to a sleep lab, another overnight test (polysomnography) is made to support the mobile diagnosis and to find the right therapy settings. Respiratory events such as apnea (cessation of breathing) are recorded, sleep quality is determined by an EEG, and other parameters such as oxygen saturation of blood and leg movements are measured for subsequent analysis and interpretation.

Löwenstein accompanies the entire process with the right devices for which it offers the necessary accessories and consumables.



Screening

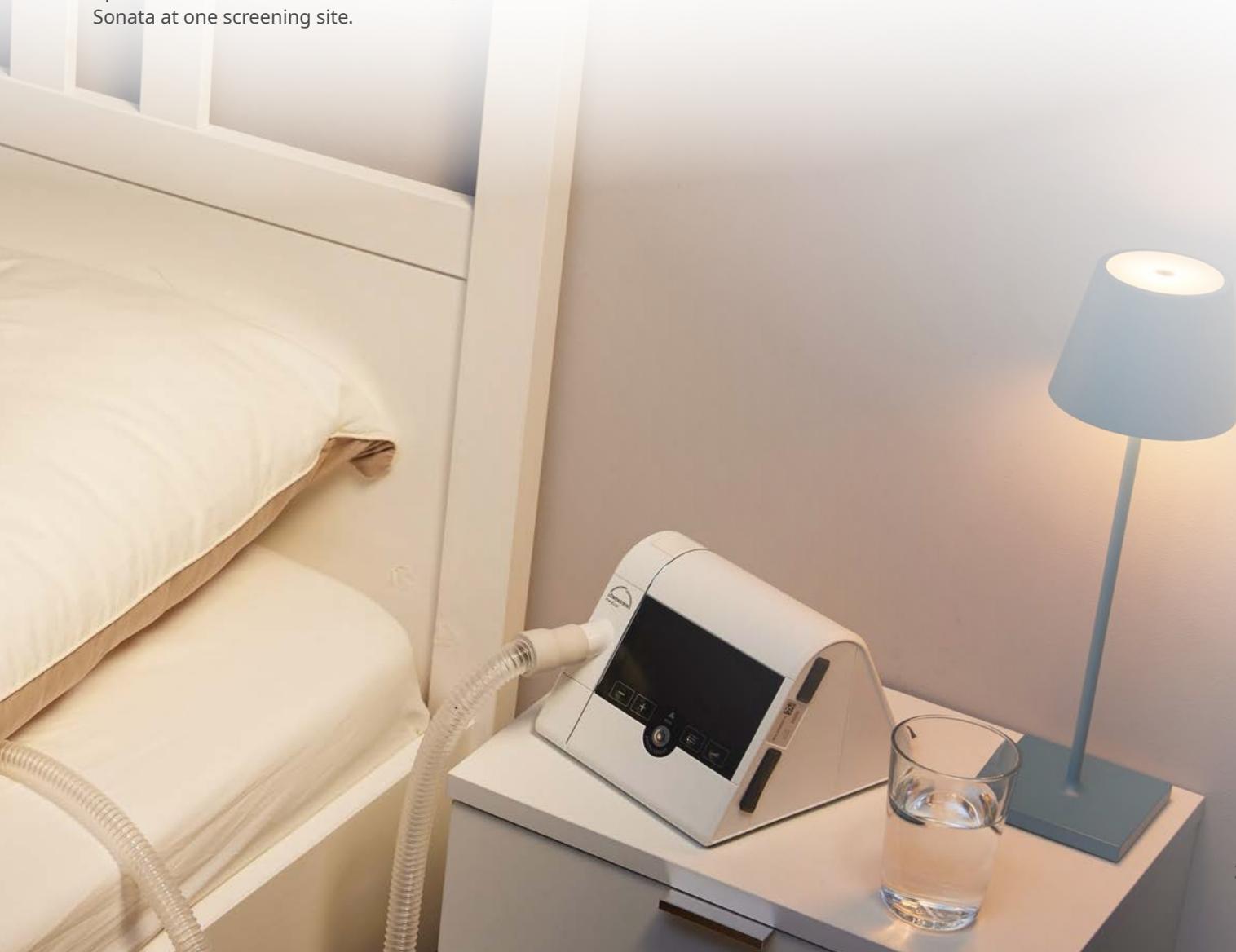
Samoa lite

Samoa lite can be used to detect Sleep-Disordered Breathing and monitor its treatment.

The device records important parameters such as respiration, body position, SpO₂, pulse and snoring throughout the night for the patient treated at home. The related software on the PC analyzes the data.

In everyday use, Samoa lite impresses users with its easy operation, meaningful data and the proven quality of diagnostic devices from Löwenstein

The system concept allows simple and straightforward operation with the other devices Samoa, Scala and Sonata at one screening site.



Polygraphy

Samoa

The 12-channel polygraphy device Samoa is intended for standard use in the diagnostic and therapeutic area. Samoa stands out from the rest with the attributes smart, simple & small.

SMART

The integrated Bluetooth interface allows wireless data transmission to the sleep therapy devices of the newest generation from Löwenstein.

SIMPLE

With its small dimensions and low weight, Samoa offers patients greater wearing comfort.

SMALL

The use of Samoa is self-explanatory, thanks to the integrated color display and intuitive plug-in and connection options.



Scala

Scala is primarily a standard polygraph device used to detect Sleep-Disordered Breathing. Equipped with 19 channels, it also offers a variety of other functions for different user groups – in a single device. Because Scala can do so much, the device may be used in medical specialty areas such as pneumology, cardiology, ENT, sleep medicine and neurology. The integrated differential pressure measurement makes Scala particularly suitable for monitoring ventilation settings.



Polysomnography

Sonata

Today's modern polysomnography systems have to satisfy many different requirements. With the new 65-channel PSG system Sonata, Löwenstein Medical offers a solution for a range of demanding uses. Based on more than 25 years of experience in sleep diagnostics, Löwenstein Medical developed a PSG system with simple operation, attractive design, ultra-modern technology and unmatched flexibility. Of course Sonata also boasts AASM compatibility, low follow-up costs and low maintenance.



Functional Overview

Polygraphy and Polysomnography



Function	Samoa lite Screening	Samoa Polygraphy	Scala Polygraphy	Sonata Polysomnography
EEG	-	-	✓ by means of ExG channels	✓
EOG	-	-	✓ by means of ExG channels	✓
EMG Chin	-	-	✓ by means of ExG channels	✓
ECG	-	-	✓ by means of ExG channels	✓
LEMG	-	-	✓ by means of ExG channels	✓
ExG*	-	-	✓	✓
Flow (nasal cannula)	✓	✓	✓	✓
Flow (thermistor)	-	✓	✓	✓
Thorax / Abdomen (pressure pads)	-	✓	✓	✓
Thorax / Abdomen (RIP)	-	-	✓	✓
Snore (nasal cannula)	✓	✓	✓	✓
Snore (microphone)	-	-	✓	✓
SpO ₂	✓	✓	✓	✓
Pulse	✓	✓	✓	✓
Pulse curve	✓	✓	✓	✓
PTT	-	-	-	✓
Position	✓	✓	✓	✓
Light	✓	✓	✓	✓
Pressure	✓	✓	✓	✓
Breathing rate	✓	✓	✓	✓
Heart rate	-	-	✓	✓
Phase T-A	-	✓	✓	✓
Blood pressure	-	-	-	✓
Actimeter (external sensor)	-	-	-	✓
Actimeter (intern)	✓	✓	-	-
Offline recordings	✓	✓	✓	✓
Online recordings	✓	✓	✓	✓
Digital prisma channels (online)	✓	✓	✓	✓
External analog channels	✓	✓	✓	✓
Audio / Video (online)	✓	✓	✓	✓
Bluetooth connection (offline) to prisma SMART / SOFT max / plus	-	✓	-	-
WLAN-capable (online)	-	-	✓	✓

* Two configurable channels available for EEG, EOG, EMG, LEMG or ECG.

Equipment

Löwenstein offers many options for equipping sleep-diagnostic facilities, from functional units for therapy, PSG, audio and video installation to complete mobile PS/PSG device carts. The decor can be adapted to the customer's room design.



Functional Unit for Treatment

The smart solution for the patient's room. The mobile device cabinet serves as the interface connecting therapy device, polysomnography and the patient. A tidy and smart solution for patient room installations, the unit organizes technical components for therapy device management, signal feeds and PSG cable management.



Audio/Video Installation Unit

An infrared light is mounted on the Audio/Video Installation Unit to allow video observation of patients during the night. The unit, which contains everything required for technical installations, can be installed on the ceiling or the wall. A network camera with a fixed focal length is available as an alternative to the audio/video installation unit. The compact camera has fully integrated functions and high-quality resolution. With the integrated infrared spotlight, microphone and speaker, it has all the functions required for flexible use.



PG/PSG Device Cart

The mobile cart accommodates the full range of sleep diagnostics equipment, from audio/video and therapy device management to a computer. The cart can be rolled to the patient's bedside, where the sleep diagnostic examination can be started and conducted.



Software

Sleep Xpert App

The Sleep Xpert App eliminates time-consuming trips between patient room and monitoring station while cable is laid and the recording is started in the sleep lab or ventilation unit. With the app the user can execute all important processes such as recording start, impedance measurement, bio-signal calibration, signal monitoring and commentary entry right from the patient's bedside. The relevant patient room can be selected in the app running on a mobile device such as a tablet. The Sleep Xpert App works with the Löwenstein PSG system Sonata, MiniScreen PRO, the online MiniScreen plus and MiniScreen premium.



Accessories

Nasal Pressure Cannula Length 50 cm, Luer lock connection	200-0312/10	SpO₂ Sensor Premium for Samoa, Scala, Sonata	930300
Nasal Pressure Cannula Length 210 cm, Luer lock connection	100-0276/10	Snore Microphone Sensor for snoring detection for Scala, Sonata	930321
Single-use T-Adapter Adapter to record airflow and pressure, Length 50 cm, Luer lock connection	500001	Single-use adhesive electrodes register EEG, EOG, EMG signals, Package of 12. Length 100 cm	31.6075.03
		Length 150 cm	31.6076.03
Single-use T-Adapter Adapter to record airflow and pressure, Length 210 cm, Luer lock connection	500002	Single-use Cup electrodes to register EEG, EOG, EMG signals, Pack of 10. Length 100 cm	515102
		Length 150 cm	515103
Pressure Diff Adapter Differential pressure adapter for Sonata, Scala	930322	ECG adhesive electrodes Package of 25	100-0031/01
Flexible Tube Adapter for Pressure Diff Adapter	wm95263		
Thermistor Sensor for airflow recognition for Scala / Sonata	930320		
	929320		



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