

# AURA PSG LITE

## *Ambulatory Sleep Screener*



**WORLD LEADER IN SLEEP DIAGNOSTICS**



[www.grasstechnologies.com](http://www.grasstechnologies.com)

# AURA® PSG LITE

## *Ambulatory Sleep Screener*

*Use it at home for ambulatory screening and use it in the lab for a full PSG!*

### FEATURES

- Ambulatory, out-of-lab applications
- Tethered, in-lab applications
- Use with TWin Companion EKG Holter Software
- 16-channels
- Built-in Pulse Oximeter
- Built-in Electrode/Sensor Connections
- Pulse Transit Time (PTT)
- Automatic Sleep Report Generation
- Compact design that is rugged, lightweight & easy to wear
- Limited Lifetime Warranty on Grass manufactured parts

This powerful, easy-to-use Sleep Screener consists of the high quality 16-channel AURA PSG LITE Amplifier System with built-in electrode/sensor inputs and built-in oximeter designed especially for PSG, and TWin PSG Record and Review Software. Grass's powerful Panorama digital video option, (in-lab only), FASS Fully-Automated Sleep Stager, TWin Companion EKG Holter software, and a wide selection of supplies and accessories are also available.

At the heart of the AURA PSG LITE system are Grass designed and manufactured amplifiers. Grass amplifiers are world-renowned in the field of sleep diagnostics for their quality, reliability, simplicity, and serviceability. The amplifier is designed specifically for the sleep monitoring lab and combines the latest digital design techniques with decades of amplifier design and manufacturing experience.

The amplifier system provides for patient safety isolation, signal conditioning (physiological signal amplification and filtering) and digitization.



### AMBULATORY

AURA PSG stores data directly to a removable CompactFlash® card for out-of-lab sleep diagnostic testing. The lightweight amplifier system is worn by the patient in a comfortable pouch. Electrode and sensor connections are conveniently made directly to the AURA PSG LITE. Typical polysomnographic signals are conditioned and digitized in the AURA PSG LITE, and then stored directly to the CompactFlash card. The AURA PSG LITE can easily be configured to “start up” at a user specified date/time. Data will be recorded from that point forward. When the study is complete, data from the CF card is uploaded via Grass's TWin software.

The AURA PSG LITE Amplifier System can also be used in a tethered mode. If tethered, no battery is needed as the AURA PSG LITE is powered by the computer. A host computer, using TWin software, starts and stops the data transmission and monitors the digitized data.

### AURA PSG LITE SYSTEM (MODEL AURAPSG16-SYS)

AURA PSG LITE Sleep Screener is supplied with TWin Sleep Record & Review software, and amplifier system. Provide your own PC or laptop.

### AURA PSG LITE BASE SYSTEM (MODEL AURAPSG16-KIT)

For adding additional amplifier/recorders, AURA-PSG LITE base system is supplied with the Amplifier system only, and it is assumed you already have TWin Sleep Record & Review software.

### SUPPORT & SERVICE

All Grass instrumentation is backed by a knowledgeable support staff ready to respond to all of your needs. Technical support is available 24 hours a day, 7 days a week. Request information on our Customer Support Plans. Training is also available.

# TWin® PSG

## *flexible, easy-to-use software*

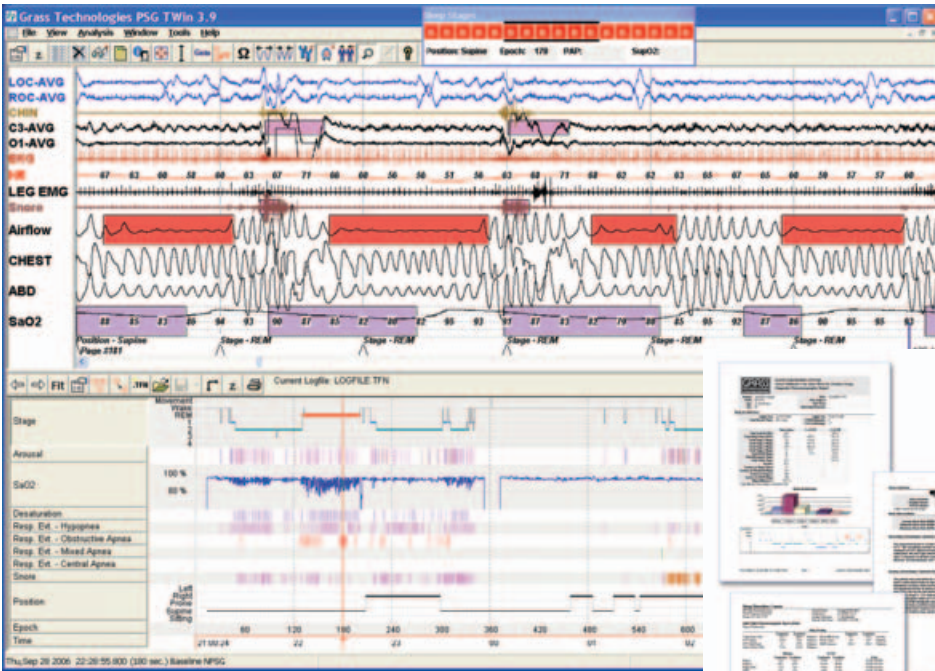
*Twin PSG is the software that brings everything together! Many years of dedication to the field of sleep diagnostics has allowed Grass to develop a software platform that is easy to use, yet flexible enough to expand upon.*

**Easy Setup:** With TWin's simplified installation package, utilize the predefined list of annotations, keyboard events, PSG events, or montages to set up the PSG system quickly.

**User Profiles:** Use Profile Manager to configure a profile for each technician or physician using the system. Their montage, trace color, record configuration, review setup, and other preferences are stored and loaded at any time.

**Montages:** Create virtually an unlimited number of montages, off-line or realtime, with the intuitive Montage Editor. Average A1 and A2 to eliminate artifact, average referencing, assign specific channel types to facilitate event scoring, and colored tracings are some of the features within the Montage Editor.

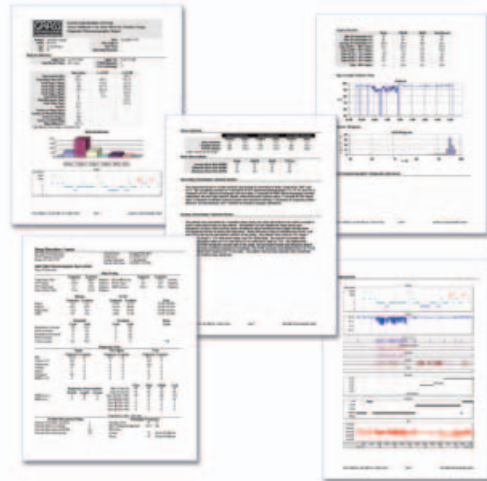




**Archive Managing:** Included with the system is TWIN's archive managing software. Quickly and easily store studies and/or digital video to different types of media, such as CD or DVD.

**Reports:** Select from various pre-configured single and multi-page sleep reports! Use Sleep Report Wizard to create additional sleep report statistics. Customization of reports can be implemented to meet the specific needs of

your sleep lab. Reports include examples of diagnostic, therapeutic, split-night and MSLT/MWT reports. Sleep Staging and Scoring Comparison for inter-lab QA comparisons.



**Recorder:** The recording module opens instantly, with just a double-click on the TWIN "start-up" icon. Easily perform impedance checks, calibrations, and montage adjustments. Entering user-defined events and annotations is as simple as a single keystroke. Accurate, high-quality digital PSG recording is guaranteed.

**Reviewer:** TWIN's intuitive database makes it easy to bring up a patient study for quick review. Utilize keyboard or on-screen controls to navigate through a record. Amplitude and measurement tools, along with zoom capabilities allow the user to accurately analyze specific waveforms. Potential Mapping and Spectral Analysis tools are included with TWIN for advanced data review.

**Sleep Scoring:** Stage and score recordings efficiently and accurately. A predefined list of stages and scores can be utilized, or create new events to meet your specific needs. Computer assisted sleep scoring is available for Respiratory, Leg Movement, Snore, Bruxism, and Desaturation events. Automatic Arousal correlations and EKG, body position and DC channels trending is also available. Finally, utilize the Sleep Scoring Comparison Module to assist with inter-lab QA comparisons.



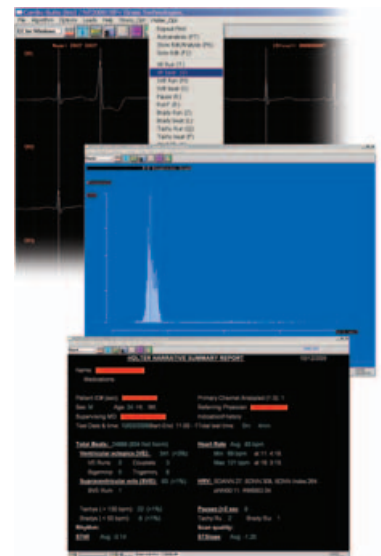
Sleep Staging and Scoring Comparison for inter-lab QA comparisons

**OPTIONAL SOFTWARE INCLUDES:**

**Twin® Companion Holter EKG Analysis Software**

Twin PSG/EEG Companion is a proven, FDA approved Holter EKG Analysis Software package designed to analyze up to three channels of EKG data recorded as part of a TWIN in-lab or ambulatory study. Run off-line, the program will perform a beat-to-beat analysis and identify normal beats, arrhythmias, tachycardias and bradycardias. After the analysis, the user can quickly go from event to event for confirmation and editing. The program will also perform heart rate and heart rate variability analysis.

A comprehensive report is available which includes summary of findings, sample printouts of arrhythmias, full disclosure printouts of selected times or the entire recording, and heart rate and heart rate variability histograms. These, along with a TWIN summary report can then be made available to the referring cardiologist or other specialist.



**Request more information:**

- FASS® Fully-Automated Sleep Stager
- Panorama® Synchronized Digital Video/Audio (in-lab use)

## AMPLIFIER SPECIFICATIONS

<b>Amplifier</b>	Grass Technologies AURA PSG LITE 16-channel system 4 referential AC channels 7 differential AC channels 3 Pulse Oximeter channels, SpO <sub>2</sub> , PulseRate, PulseTransit Time 2 DC coupled inputs <i>Other inputs:</i> 2 Reference inputs (SAFELEAD type) 2 Ground inputs (SAFELEAD type)
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## REFERENTIAL ELECTRODE INPUTS

<b>Input Signal Range</b>	4 mV peak to peak full-scale
<b>Input Impedance</b>	12 Megohm or higher, all inputs including reference
<b>Differential Input Impedance</b>	20 Megohm or higher
<b>Amplitude Accuracy</b>	±2.5 % (prior to software correction)
<b>CMR (60 Hz)</b>	>80 dB (signal referenced) >100 dB (earth reference)
<b>Noise</b>	<2 µV peak to peak
<b>Input Bias Current</b>	<4 nA
<b>Maximum Input</b>	4 mV

## DIFFERENTIAL INPUTS

<b>Input Signal Range</b>	4 mV peak to peak full-scale
<b>Input Impedance</b>	12 Megohm or higher
<b>Amplitude Accuracy</b>	± 2.5 %
<b>CMR (60 Hz)</b>	>80 dB (signal referenced) >100 dB (earth reference)
<b>Noise</b>	<2 µV peak to peak
<b>Input Bias Current</b>	<350 nA
<b>Maximum Input</b>	4 mV

## ISOLATED DC INPUTS

<b>Input Signal Range</b>	±2.0 V
<b>Input Impedance</b>	1.5 Megohm
<b>Impedance Test Mode</b>	<i>Referential inputs only:</i> 1 kohms to 100 kohms, 10%
<b>Calibration Signal</b>	<i>Referential inputs only:</i> 500 µV peak to peak ±2%
<b>Sampling Rate</b>	200 samples/second/channel

<b>Power</b>	Rechargeable 3.6 V lithium battery <i>Capacity:</i> 10 hours in the wireless mode, 12 hours in the ambulatory mode <i>Charging:</i> The battery must only be charged with the Grass 42050100 Battery Charger
<b>Physical Size</b>	<i>Amplifier Unit approximately:</i> 3.5" W x 5.9" H x 1.0" D (8.9 cm x 14.9 cm x 2.5 cm) <i>Weight:</i> 10 ozs. (280 g)

## SYSTEM SPECIFICATIONS

<b>Regulatory</b>	AURA PSG System: certified to FCC Part 15, Class B UL 60601-1 CAN/CSA C22.2 No. 601.1 IEC 60601-1-1 IEC 60601-2-26 EN 60601-1-2 ETSI EN 301 489-1 ETSI EN 301 489-17 ETSI EN 300 328-1 CE marked to EC MDD (93/42/EEC)
<b>Warranty</b>	Lifetime Limited Warranty on Grass manufactured parts (see our full warranty for details)
<b>Software</b>	Fully supported by TWin

## ORDERING INFORMATION

### AURA PSG LITE System (Model AURAPSG16-SYS) Includes:

Grass TWin Sleep Record & Review software. Grass patient-worn AURA PSG LITE Amplifier System with built-in oximeter, CompactFlash Cards (2) and reader. Rechargeable Amplifier Battery (2) with battery charger and power supply, Pouch for AURA PSG LITE amplifier and 4 sizes of straps.\*

### AURA PSG LITE Base System (Model AURAPSG16-KIT) Includes:

Grass patient-worn AURA PSG LITE Amplifier System with built-in oximeter, CompactFlash Cards (2). Rechargeable Amplifier Battery (2) with battery charger and power supply, Pouch for AURA PSG LITE amplifier and 4 sizes of straps.

### AURA PSG LITE Wireless Upgrade (Model 42145000) Includes:

Base Station with 2 high level DC inputs.

\* Provide you own PC or laptop. Grass personnel must approve all personal computers used with the base unit.

*All specifications are subject to change without notice.*



**Grass Technologies**  
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**Product Group**

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