

2009 POLYSOMNOGRAPHY BUYERS GUIDE

Compiled by Frank Visco

Company	Bio-logic, a division of Natus (800) 323-8326 www.natus.com blsc_customer_service@natus.com		Cadwell Laboratories Inc. (800) 245-3001 www.cadwell.com info@cadwell.com			Cleveland Medical Devices Inc. (877) 253-8363 www.clevemed.com FSGanywhere@clevemed.com			Compumedics USA Inc. (877) 717-3975 www.compumedics.com info@compumedics.com	Embla (888) 662-7632 www.embla.com ussales@embla.com	Grass Technologies, an Astro-Med Inc. product group (877) 472-7779 www.grasstechnologies.com grass@astromed.com		
Product name	Sleepscan Vision	Sleepscan Netlink Traveler	Easy II	Easy III	Easy Ambulatory II	Crystal Monitor PSG Series (20-B and 20-S)	Sapphire PSG	SleepScout	E-Series	REMLogic N7000	Embletta	AURA PSG wireless/ambulatory system	Comet PSG
Analog, digital, or both	Digital	Digital	Digital	Digital	Digital	Digital	Digital	Digital	Digital	Both	Digital	Digital	Digital
EEG applications	Routine	Ambulatory	Routine	ICU, epilepsy/LTM, routine	Ambulatory, routine	PSG	PSG	PSG	Routine, clinical, EEG, PSG			Routine, ambulatory	Routine, ambulatory
Amplifier/headbox dimensions (H x L x W) in inches	2.5 x 10 x 7; 5 x 4 x 0.75	5.74 x 1.74 x 3.9; 6 x 2 x 1.5	3.5 x 9 x 6	2 x 10 x 6.5	4 x 6 (pouch)	Combined in one unit: 5.3 x 2.5 x 1	Combined in one unit: 8.4 x 4 x 1.4	Combined in one unit: 4.6 x 2.7 x 1		2.95 x 7.4 x 7.4; 0.98 x 7.4 x 5.1	0.8 x 4.9 x 2.5	2 x 6 x 7; same unit	2 x 6 x 7; same unit
Amplifier/headbox weight (lb.)	3; less than 0.5	0.8	3	3	Less than one	210 g	538 g	190 g		4.4; 1.37	0.24	2.3; same unit	2.3; same unit
Cost/warranty	Starting at \$20,000/One year	Starting at \$16,000/One year	One year	One year		One year	One year	One year	One year	Two years	Two years	Limited lifetime warranty on Grass Technologies manufactured parts	Limited lifetime warranty on Grass Technologies manufactured parts
Can the system run on batteries?	No	Yes, rechargeable Li-Ion	No	No	Yes, standard C or D cell	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Recording:													
Number of channels	44	36	32	34 to 150+	32	14	22	Nine	Up to 64	60	Seven, 14 derived	24 built-in, eight external	Up to 50
Sampling rates (Hz)	256, 512	256, 512	6,400	3,200		256	256	256	512	1 to 2000	1 to 200	200	200 or 400 samples/second
Variable montage capabilities	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Referential/bipolar/re-reference	Yes	Programmable	Programmable
Modes	Adult, pediatric	Adult, pediatric	Adult, pediatric, neonate	Adult, pediatric, neonate	Adult, pediatric, neonate	Adult, pediatric	Adult, pediatric	Adult, pediatric	Adult, pediatric, infant	Adult, pediatric, infant	Adult, pediatric	Adult, pediatric, infant	Adult, pediatric, infant
Network connections	Ethernet	Ethernet	Ethernet	Ethernet		Wireless 900 MHz or 2.4 GHz	Wireless 900 MHz or 2.4 GHz	Wireless 2.4 GHz	Ethernet	Ethernet	Ambulatory or USB-wired	Wireless	Ethernet
Serial connectivity	Yes	External pulse oximeter	SpO ₂ , nasal pressure, body position, limb movement	SpO ₂ , nasal pressure, body position, limb movement, light	SpO ₂ , nasal pressure, body position, limb movement, light	Built-in pulse oximeter, body position, nasal pressure, and pressure-based airflow for CPAP and BiPAP levels	Built-in pulse oximeter, body position, nasal pressure, and pressure-based airflow for CPAP and BiPAP levels	Built-in pulse oximeter, body position, nasal pressure, and pressure-based airflow for CPAP and BiPAP levels	Up to 16 external connections	Integrated oximeter, eight DC inputs	Integrated oximeter, autotest PAP	All	All
Software	Windows® XP Professional	Windows® XP Professional	Windows® XP	Windows® XP	Windows® XP	Windows® XP or Vista	Windows® XP and Vista	Windows® XP or Vista	Windows® XP	Windows® 2000, Windows® XP	Windows® 2000, Windows® XP	Windows® XP	Windows® XP
Type of effort detection	RIP, piezo crystals	RIP, piezo crystals	RIP, piezo	RIP, piezo	RIP, piezo	RIP or piezo crystals	RIP or piezo crystals	RIP or piezo crystals	RIP or piezo	RIP with derived sum	RIP with derived sum	RIP, piezo crystals	RIP, piezo crystals
Types of sensors/electrodes													
Full referential EEG	X	X	X	X	X				X	X		X	X
Esophageal pH availability	X		X	X	X					X		X	X
Integrated oximeters	X		X	X	X	X	X	X		X	X	X	X
Integrated pressure transducer			X	X	X	X	X	X	X	X	X		
NPT-capable	X		X	X	X				X	X		X	X
Real-time respiratory event detection	X	X	X	X	X	X	X	X	X	X	X	X	X
Real-time cardiac event detection			X	X	X							X	X
Periodic limb movement detection	X	X	X	X	X				X	X	X	X	X
Thermistor	X	X	X	X	X	X	X	X	X	X	X	X	X
Pneumotachograph			X	X	X								
Snore channel recording	X	X	X	X	X	X	X	X	X	X	X	X	X
Scoring:													
Manual	X	X	X	X	X	X	X	X	X	X	X	X	X
Computer-assisted	X	X	X	X	X	X	X	X	X	X	X	X	X
Automatic	X	X	X	X	X				X	X	X	X	X
Ability to trend multiple channels	X	X	X	X	X	X	X	X	X	X	X	X	X
Built-in patient database	X	X	X	X	X	X	X	X				X	X
Customizable reports	X	X	X	X	X	X	X	X	X	X	X	X	X
Printing module	X	X	X	X	X	X	X	X	X	X	X	X	X
Split-screen recording	X	X				X	X	X	X	X	X	X	X
Meets technical/digital specifications in Section III of the 2007 AASM scoring manual	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Monitoring:													
Stationary recording	X		X	X	X	X	X	X	X	X	X	X	X
Ambulatory recording		X	X	X	X	X	X	X	X		X	X	X
Control room capabilities	X		X	X	X	X	X	X	X	X	X	X	X
Video/surveillance option	X		X	X	X	X	X	X	X	X	X	X	X
Local monitoring	X		X	X	X	X	X	X	X	X	X	X	X
Remote monitoring	X		X	X	X	X	X	X	X			X	X
CO ₂ monitoring	X						X		X	X		X	X
Look-back features	Toggle look-back with one click and view live and previously collected data simultaneously, page through and change montages, time scale as desired within look-back		Up to three hours	Complete study	Up to three hours	Full real-time and post-acquisition review and scoring; look back in different montages and different time scales	Full real-time and post-acquisition review and scoring; look back in different montages and different time scales	Full real-time and post-acquisition review and scoring; look back in different montages and different time scales	Complete and in real-time	Review/score/edit/change view	Review/score/edit/change display	Complete look-back capabilities	Complete look-back capabilities
Data storage options	Local hard drive, network storage area, CD-R, DVD-R, DVD-RAM	Local hard drive, network storage area, CD-R, DVD-R, DVD-RAM	DVD, CD-R, DVD-R	DVD, CD-R, DVD-R	DVD, CD-R, DVD-R	Removable SD memory card, local hard drive, network drive, CD, DVD	Removable SD memory card, local hard drive, network drive, CD, DVD	Removable SD memory card, local hard drive, network drive, CD, DVD	NAS, external	Archiving to CD/DVD/network location	Archiving to CD/DVD/network location	Hard disk, DVD±RW	Hard disk, DVD±RW
Other:													
Customer support services	On-site installation and training, 24/7 phone support by registered techs, VPN support	On-site installation and training, 24/7 phone support by registered techs, VPN support	Free telephone support for PSG systems 24/7	Free telephone support for PSG systems 24/7	Free telephone support for PSG systems 24/7	Simple installation, on-site training, 24/7 support, web-based and telephone support, loaner units provided at no cost during warranty period	Simple installation, on-site training, 24/7 support, web-based and telephone support, loaner units provided at no cost during warranty period	Simple installation, on-site training, 24/7 support, web-based and telephone support, loaner units provided at no cost during warranty period	On-site installation, on-site training, online training, 24/7 support, service contract and fee for service	Technical support group on 24/7 standby, on-site and online training programs, annual customer focus groups	Packaged with easy-to-use software, instructional patient hookup video, and 24/7 technical support	24/7 customer support provided by Grass Technologies specialists	24/7 customer support provided by Grass Technologies specialists
Additional features	User-definable analysis parameters; dataShare allows analysis of patient files on other computers without special software.		Scorer-to-Scorer™ Q-Video with Q-Movement animation features	Scorer-to-Scorer™ Q-Video, synchronized database, remote viewing	Can collect data up to 72 hours with battery charge; uses standard flash memory cards	Type I/II, 14 channels, including EEG, EOG, EMG, ECG, respiratory effort belts, body position, pulse oximetry, pressure-based airflow; custom reports in Microsoft Word	22-channel wireless, offers full diagnostic capabilities in a small package for any setting	Type III home monitor exceeds AASM's portable monitoring guidelines, SD card stores six-plus overnight studies, on-board wireless capability allows real-time monitoring, patient self-hookup DVD and packet		Designed for clinical and research applications, designed to streamline workflow and improve patient data management	Embletta is a pocket-sized digital recorder for diagnosis of sleep-disordered breathing.	EDF import/export, ASCII export available, MPEG4 video capture, compatible with other Grass Technologies PSG systems, including the AURA PSG LITE sleep screener	EDF import/export, ASCII export available, MPEG4 video capture, compatible with other Grass Technologies PSG systems, including the AURA PSG LITE sleep screener

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Product name	AirEEG/PSG with Polysmith 6	JE-921 Amplifier with Polysmith 6	Alice 5	Alice LE		SleepWorks Sleep System with Connex Amplifier
Analog, digital, or both	Digital	Digital	Digital	Digital		Digital
EEG applications	Routine, ambulatory	Routine	Routine	n/a		Routine, LTM, surgical
Amplifier/headbox dimensions (H x L x W) in inches	4.5 x 5.8 x 2.1; 2.15 x 1 x 5.5	6.6 x 7.3 x 2.8; 5 x 0.95 x 3.3	Base: 12.5 x 14 x 5; 2 x 4 x 10 (headbox is amp)	Base: 12.5 x 14 x 5; 2 x 4 x 10 (headbox is amp)		Base: 1.7 x 12 x 13; breakout: 1.1 x 6.1 x 3.8
Amplifier/headbox weight (lb.)	1.05; 0.26	2.2; 0.7	Base: 7.8; 1.5	Base: 7.8; 1.5		Base: 4; breakout: 0.68
Cost/warranty			Two years	One year		Starting at \$19,000/ One year limited
Can the system run on batteries?	Yes	No	n/a	n/a		No
Recording:						
Number of channels	Up to 64	Up to 32	55	31		50
Sampling rates (Hz)	200	Up to 1,000	Up to 2,000	Up to 2,000		512, 256, 200, 50, and 10
Variable montage capabilities	Full re-montage capabilities	Full re-montage capabilities	Yes	Yes		Complete montage and reference flexibility
Modes	Adult, pediatric, infant	Adult, pediatric, infant	Adult, pediatric, infant	Adult, pediatric, infant		No
Network connections	Wireless	Ethernet	Ethernet	Ethernet		Ethernet
Serial connectivity	CPAP	CPAP	Direct Digital for most Respironics Therapy, also analog signal from any external device	Direct Digital for most Respironics Therapy, also analog signal from any external device		1.5 mm safety touch, 1/8-inch mini phone
Software	Windows® XP Professional SP2 or greater	Windows® XP Professional SP2 or greater	Windows® 2000, XP Professional, Vista Business	Windows® 2000, XP Professional, Vista Business		Windows® XP
Type of effort detection	Piezo or RIP	Piezo or RIP	Piezo or zRIP	Piezo or zRIP		RIP and/or piezo crystals
Types of sensors/electrodes						
Full referential EEG	X	X	X	X		X
Esophageal pH availability	X	X	X	X		X
Integrated oximeters	X	X	X	X		X
Integrated pressure transducer			X	X		
NPT-capable		X	X	X		X
Real-time respiratory event detection			X	X		X
Real-time cardiac event detection			X	X		X
Periodic limb movement detection	X	X	X	X		X
Thermistor	X	X	X	X		X
Pneumotachograph		X				
Snore channel recording	X	X	X	X		X
Scoring:						
Manual	X		X	X		X
Computer-assisted			X	X		X
Automatic	X	X	X	X		X
Ability to trend multiple channels	X	X	X	X		X
Built-in patient database	X	X				X
Customizable reports	X	X	X	X		X
Printing module	X	X	X	X		X
Split-screen recording	X	X	X	X		X
Meets technical/digital specifications in Section III of the 2007 AASM scoring manual	Yes	Yes	In progress	In progress		Yes
Monitoring:						
Stationary recording	X	X	X	X		X
Ambulatory recording	X					X
Control room capabilities	X	X	X	X		X
Video/surveillance option	X	X	X	X		X
Local monitoring	X	X	X	X		X
Remote monitoring	X	X	X	X		X
CO ₂ monitoring		X	X	X		X
Look-back features		Multiple time base, time guide, trend bars with editing and artifact marking, drag-and-drop channels, log events	Full real-time/post-acquisition including split view real-time and look-back	Full real-time/post-acquisition including split view real-time and look-back		Complete review and analysis capability while recording; able to show live and review in split-screen mode
Data storage options		Hard drive, CD, DVD, network solution capable	Local hard drive, CD, DVD, flash memory, network drives	Local hard drive, CD, DVD, flash memory, network drives		Hard drive, CD, DVD, any Windows-compatible media
Other:						
Customer support services	Polysmith Support provides 24/7 telephone support; 24/7 online support is available where applicable; on-site installation and in-service of sleep system	Polysmith Support provides 24/7 telephone support; 24/7 online support is available where applicable; on-site installation and in-service of sleep system	24/7 support, 2005 Frost & Sullivan award recipient for customer-ranked leader in support/service; 2006 market leadership award	24/7 support, 2005 Frost & Sullivan award recipient for customer-ranked leader in support/service; 2006 market leadership award		Phone and remote PC support team available 24/7; nationwide network of service engineers can be dispatched quickly when required
Additional features	Integrated SaO ₂ , patient status tracking, integrated database, auto-archival of sleep studies, customizable interactive reports with Boolean logic capabilities	Integrated direct flow ET/CO ₂ and SaO ₂ , patient status tracking, integrated database, auto-archival of sleep studies, customizable interactive reports with Boolean logic capabilities	Six-channel ECG, PTT, Masimo oximetry, EDF/ASCII data export, Omnilab multi-modality titration system, real-time impedance during/after study, integrated intercom, remote data and study access	Masimo oximetry, EDF/ASCII data export, Omnilab multi-modality titration system, impedance check during/after study, remote data and study access		Fast manual and automated analysis, flexible reporting, easy data management, full EEG capability, integrated Masimo oximeter, self-monitoring tools, synchronized MPEG4 video