ACTIGRAPHY

Company	ActiGraph	Ambulatory Monitoring Inc		Philips Respironics	SOMNOmedics
Product Name	ActiSleep monitor	Motionlogger MicroMini	Motionlogger Micro Sleep Watch	Actiwatch 2	SOMNOwatch
Website	www.actisleep.com	www.ambulatory-monitoring.com	www.ambulatory-monitoring.com	www.philips.com/actigraphy	www.somnomedics-diagnostics.com
Cost/Warranty	$400 per unit/1 year	$995/1 year	$1,295/1 year	1-year standard warranty; extended warranty available	$1,730 (set including software)/2 year
Accelerometer Technology	Triaxial solid-state accelerometer with digital filtering	Piezo-electric Bimorphic Transducer	Piezo-electric Bimorphic Transducer	Solid-state "Piezo-electric"	Miniaturized Poly-Silicone-Surface micromachined sensor (MEMS)
Product Dimensions	4.3 x 3.8 x 1.5	3.5 cm diameter x 1.1 cm height	3.5 cm diameter x 1.2 cm height	4.3 cm x 2.3 cm x 1.0 cm	4.5 cm (diameter) 1.6 cm (height)
Weight Including Batteries and Wrist Band	Monitor weighs 18 grams, 25 grams with deluxe wrist strap, 21 grams with disposable wrist strap	31.2 grams	31.2 grams	16 grams	30 grams
Batteries	Rechargeable lithium polymer	1 DL2430 Lithium ion coin cell; disposable	1 DL2430 Lithium ion coin cell; disposable	Lithium cell battery, rechargeable at dock	Li-Ion-Accu, inbuilt, rechargeable
Battery Life	8 days	125 days	125 days	30-day battery life (at 1-minute epoch)	26 days
Type of Memory Storage	4 MB nonvolatile memory	Nonvolatile	Nonvolatile	Nonvolatile 1 Mbit	Internal storage card 8 MB
Recording Time at 1-Minute Sample Interval	1,410 days	22 days	4 months	30 days—Activity and light at 1-minute epoch	45 days when recharged
Logging Intervals	With ActiSleep SW program, 60 seconds. With ActiLife SW program, raw data mode (30 x per second), 1, 2, 3, 5, 10, 15, 30, 60, 120, 180, 240 seconds	1 minute	1 minute	15-second, 30-second, 1-minute, 2-minute, 5-minute	Sampling Rate 1 per second up to 256 per second; Storage Rate 1 per 120 seconds (2 minutes) up to 256 per second
Light Sensor Type	Photo IC that incorporates a photodiode, and current amplifier in one package	Separate single-channel body-worn recorder ($795); 2 mm² Active Area Linear Planar Photodiode with Integral Photopic Filter	N/A	Silicon photodiode	NPN-Phototransistor
Wavelength Range	400–900 nanometers with peak sensitivity at 600 nanometers	400-700 nanometers, 550 nanometer peak, 40 degree Half Angle Directional Sensitivity	N/A	400-900 nanometers	350-970 nanometers
Moisture Protection	Not waterproof or water resistant	10M waterproof	10M waterproof	Immersible 1m for 30 minutes per IPX7 IEC 60529	Water resistant (waterproof on demand)
Operating Temp Range	-4ºF to 140ºF	33ºF to 120ºF	33ºF to 120ºF	41ºF to 104ºF	41ºF to 104ºF
Communications Interface	USB	IR to USB interface	IR to USB interface	Direct connect to dock 57.6 kbps; USB to PC (1.1 and 2.0 compatible)	USB
Computer Operating System Compatibility	Windows XP, Windows Vista, Windows 7	Windows XP, Windows 7, Windows Vista	Windows XP, Windows 7, Windows Vista	Actiware: Windows® 2000, Windows XP, or Windows Vista; Actiware CT: Windows 2000, Windows XP Professional, Windows Vista Business, or Windows Vista Ultimate	Windows XP
Peer-reviewed Validation Articles	Yes (citations available with online version)	Yes (citations available with online version)	Yes (citations available with online version)	Yes (citations available with online version)	N/A
Additional Features	ActiGraph's new ActiSleep Monitoring System, consisting of the triaxial ActiSleep monitor and the ActiSleep analysis software, collects and analyzes nocturnal activity data and ambient light levels to determine sleep/wake patterns, sleep latency, number and duration of awakenings, total time asleep, and overall sleep efficiency and light intensity. The ActiSleep analysis program is a web-based software application that graphs, analyzes, and archives data collected by the ActiGraph monitor.	Choice of data collection mode (movement frequency or intensity); optional, separate light, temperature, and sound recorders	Real-time display with time zone adjust feature; event marker with visual feedback; visual activity collection indicator; simultaneous multimode data collection (movement frequency and intensity); off-wrist detection channel	Device also records in light-only mode; event marking; shock and vibration resistant; dust, heat, and perspiration resistant; latex/nickel free; biocompatibility tested; adheres to the requirements of 21 CFR Part 820, and ISO 9001 and 13485 certification; multiple data collection modes; NIST traceable calibration; sleep mode	Event marker button; 1 external channel (2nd Actisensor, ECG, EEG, temperature); linking of several SOW recordings thanks to high synchronization rate; programmable start and stop periods for several recording periods. SOMNOwatch plus also available.