










| Company | ActiGraph | | Advanced Brain Monitoring Inc | Ambulatory Monitoring Inc |
|---|--|---|---|--|
| Product Name |  ActiGraph Link |  wActiSleep-BT Monitor |  Night Shift |  Micro Motionlogger Watch |
| Website | www.actigraphcorp.com | www.actigraphcorp.com | www.advancedbrainmonitoring.com | www.ambulatory-monitoring.com |
| Cost/Warranty | TBD/1 year | \$299/1 year | \$349/Limited 2-year | 1 year |
| Accelerometer Technology | 3-axis solid state accelerometer with digital filtering | 3-axis solid state accelerometer with digital filtering | MEMS triaxial digital output motion sensor | Solid state triaxial |
| Product Dimensions | 3.5 cm x 3.5 cm x 1.5 cm | 4.6 cm x 3.3 cm x 1.9 cm | 6.35 cm x 3.8 cm x 1.3 cm | 3.6 cm x 3.6 cm x 1.2 cm |
| Weight, including Batteries and Band | 38 grams | 22 grams | 44 grams | 30 grams |
| Batteries | Rechargeable lithium polymer | Rechargeable lithium polymer | Lithium polymer | 1 DL2430 disposable coin cell |
| Battery Life | 16 days (wireless & gyro disabled, 30 Hz sample rate) | 31 days | Up to 5 nights between charges | 30+ days |
| Type of Memory Storage | 4 GB nonvolatile | 2 GB nonvolatile | 256 KB nonvolatile | 2 MB nonvolatile |
| Recording Time at 1-Minute Sample Interval | 180 days | 120 days | Up to 10 hours per night for 6 nights | 30+ days |
| Logging Intervals | Collects as raw data (30-100 Hz), processing in 1, 2, 3, 5, 10, 15, 30, 60, 120, 150, 180, and 240-second intervals | Collects as raw data (30-100 Hz), processing in 1, 2, 3, 5, 10, 15, 30, 60, 120, 150, 180, and 240-second intervals | 30-second intervals | 1, 2, 5, 10, 30, 60 seconds |
| Light Sensor Type | N/A | Photodiode | N/A | Photodiode |
| Wavelength Range | N/A | 450 to 700 nm (600 nm peak) | N/A | 400 to 700 nm (520 nm peak) |
| Moisture Protection | IP27—Water-resistant to 1 m for 30 minutes | Water-resistant | Not water-resistant | 100 m water-resistant |
| Operating Temperature Range | -4°F to 140°F | -4°F to 140°F | 5°C @ 15% relative humidity to 40°C @ 95% relative humidity | 33°F to 120°F |
| Communications Interface | USB, Bluetooth LE | USB, Bluetooth LE | USB | USB-to-IrDA |
| Computer Operating System Compatibility | Windows XP, Windows Vista, Windows 7, Windows 8, Parallels Desktop for Mac | Windows XP, Windows Vista, Windows 7, Windows 8, Parallels Desktop for Mac | Internet-based software | Windows XP, Windows Vista, Windows 7, Windows 8 |
| Peer Reviewed Validation Articles | Yes | Yes | Yes | Yes |
| Additional Features | Gyroscope and magnetometer sensors for advanced positional data capture; LCD screen displays time/date, and subject measures; integrated wear time sensor for off-wrist detection; support for heart rate (wireless HR sensor required); PLM scoring; automatic bedtime detection; daytime activity profile. Compatible mobile app supports real time data uploads and subject feedback. | Integrated wear time sensor for off-wrist detection, support for heart rate (wireless HR sensor required), PLM scoring, automatic bedtime detection, body position, and daytime activity profile. Compatible mobile app for iPhone, iPad, and Android platforms supports real time device communication and data reports. | Worn around the neck, Night Shift monitors sleep and wake time, and computes sleep efficiency, sleep latency, wake after sleep onset, and awakenings/hr, quantified snoring dB, and neck position. Records up to 356 nights' hours of use, sleep efficiency, %snoring >50 dB, neck position, and awakenings/hr. | Time/date display, event marker with LED feedback, visual status indicator, multimode data collection, temperature channel, off-wrist detection. |

| Ambulatory Monitoring Inc | CamNtech | | Philips Respironics | SOMNOmedics America Inc |
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| Motionlogger Watch | MotionWatch 8 | PRO-Diary | Actiwatch Spectrum | SOMNOwatch |
| www.ambulatory-monitoring.com | www.camntech.com | www.camntech.com | www.philips.com/actigraphy | www.somnomedics-diagnostics.com |
| 1 year | \$750/2 year | \$750/2 year | 1-year standard warranty; extended warranty available | 2 year |
| Solid state triaxial | 3-axis MEMS | 3-axis MEMS | Solid-state "piezoelectric" | Miniaturized poly-silicone-surface micromachined sensor (MEMS) |
| 5.5 cm x 4.5 cm x 1.8 cm | 3.81 cm x 2.54 cm x 1.016 cm | 5.1 cm x 3.4 cm x 0.8 mm | 4.8 cm x 3.7 cm x 1.4 cm | 4.5 cm x 4.5 cm x 1.6 cm |
| 65 grams | 16.8 grams | 16 grams | 30 grams | 30 grams |
| 1 DL2450 disposable coin cell | Common watch R2032 | Lithium-ion rechargeable | Lithium coin cell CR 2430 | Lithium-ion-Accu, inbuilt, rechargeable |
| 30+ days | 1 year | 30 days | 1-year battery life (continuous use at 1-minute epoch) | 26+ days |
| 2 MB nonvolatile | 4 MB nonvolatile | 4 MB | 2 MB nonvolatile | 8 MB internal storage card |
| 30+ days | 182 days | 14 days | 36 days—Activity plus 4 channels of light data | 45 days |
| 1, 2, 5, 10, 15, 30, 60 seconds | 2, 5, 15, 30, 60 seconds | 60s epoch | 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 |
| Photodiode | Digital | None | Red, green, and blue color sensitive photodiodes | NPN-phototransistor |
| 400 to 700 nm (520 nm peak) | 0 to 64,000 lux | N/A | Blue 400-500 nm; Green 500-600 nm; Red 600-700 nm | 350-970 nm |
| 50 m water-resistant | Waterproof | Water-resistant, not submersible | Immersible 1 m for 30 minutes per IPX7 IEC 60529 | Water-resistant (waterproof on demand) |
| 33°F to 120°F | 0°F to 150°F | 5°C to 40°C | 41°F to 104°F | 41°F to 104°F |
| USB-to-IrDA | USB | Mini USB | Infrared to dock 57.6 kbps; USB to PC (USB 1.1 and 2 compatible) | USB |
| Windows XP, Windows Vista, Windows 7, Windows 8 | Windows XP, Windows 7, Windows 8 | WinXP, Win7, Win8 | Actiware: Windows 2000, Windows XP, or Windows Vista; Actiware CT: Windows 2000, Windows XP Professional, Windows Vista Business, or Windows Vista Ultimate | Windows XP, 7, and other Windows operating systems |
| Yes | Yes | Pending | Yes | Yes |
| Adjustable time of day/date display, backlight, event marker with visual/audible feedback, visual status and battery indicators, multimode data collection, temperature channel, off-wrist detection channel, PVT test, user rating scale entry, alarms (1 user and up to 10 fixable), stopwatch, countdown timer. | The Event Marker button has a visual LED feedback indicator, confirming the event was marked. | Paperless diary with OLED screen interface and touch sensitive slider. Uses the Motionware software for sleep analysis and has additional software for user designed questionnaires with 8 different question types. FDA approved and validated against paper diaries in clinical work with timed, random, or user activated prompts. | Device also records in a red, green, and blue light only mode; off-wrist detection; 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; programmable time/date display with backlight; status feedback; multiple light and activity data collection modes; NIST traceable calibration; sleep mode. | Event marker button, sleep/wake analysis, PLM scoring, 1 external channel possible (2nd Actisensor, ECG, EEG, respiratory), programmable start and stop periods for several recording periods, linking of several SOMNOwatch recordings thanks to high synchronization rate. |