Company	Cerebra Health	Compumedics
Software	Michele Sleep Scoring	Profusion PSG Scoring Software
Website	www.michelesleepscoring.com	www.compumedics.com
Description	User-friendly interface for processing patient files; outputs all standard PSG scoring variables; objective analysis of sleep depth with Odds Ratio Product (ORP) algorithm; full editing of events, including Editing Helper algorithm for precise and efficient review. Scoring accuracy validated in arms-length peer-reviewed studies.	Compumedics' platform allows flexibility to expand your operations or even add on new diagnostic options. It is scalable, user-friendly, and offers web/cloud operations. The software suite is designed using algorithms that stage and calculate sleep parameters, offering the user speed in providing a comprehensive diagnostic and therapeutic report.
Algorithm	Developed by Dr Magdy Younes over many years; utilizes analysis of power spectra in EEG signals to determine staging and arousal scoring; analysis of flow, effort, and oxygen signals for respiratory event detection; EMG analysis for leg movement detection. Validated against large data set of all patient types and sleep pathologies.	The detection is according to AASM scoring requirements with the user having the ability modify and refine to cater for scoring variants.
Hardware Compatibility	Most acquisition systems that export to EDF format; contact info@michelesleepscoring.com for guidance on whether your system is compatible	Compumedics systems hardware
Validation Study	Malhotra A, et al. Performance of an automated polysomnography scoring system versus computer-assisted manual scoring. *SLEEP*. 2013:36(4):573-82.	Rochford PD, et al. Evaluation of automated versus manual scoring of polysomnographs in sleep disordered breathing. *Sleep Biol Rhythms*. 2006;4:A41.
Pricing Structure	$16 USD/study, volume discounts available, free 30-day trial	Standard in Profusion PSG software
Time to Score/Study	5-10 minutes after upload, depending on file size	<2 minutes (most studies)
Year Software Introduced	2011 (USA)	2014 (Profusion 4)
Current Software Version	2020, November	2014 (next version to be released summer 2021)
Duration of Included Software Updates	For the life of the product	Contact Compumedics
Scoring Parameters/Data Points in Default Report	Sleep Staging, WASO, Sleep Efficiency, Sleep Period Time, Respiratory Events including RERAs, PLMs, Arousals, Snoring, Body Position, Flow Limitation, Heart Rate, Oxygen Statistics, CO_2, Pressure/PAP levels	Sleep Staging, Arousal Analysis, PLM/Limb Movement Analysis, SAO_2 Analysis & Artifact Rejection, Heart Rate Analysis, Apnea Analysis, PTT Analysis, $ETCO_2$ Analysis, TC Analysis, pH Analysis, Pes Analysis, Snore Events
Unique Measurements/ Data Analysis Provided	Odds Ratio Product (ORP)—validated continuous measurement of sleep depth; Editing Helper algorithm to identify suggested epochs for review	Automatic arousal association
Onboarding	Remote training session provided at no charge.	Contact Compumedics.
Tech Support	Email and phone support during regular business hours (CST).	Email and phone support available 24/7.

Information based on data submitted by software marketers. Sleep Review strives for accuracy in all data but cannot be held responsible for claims made by marketers. All autoscoring software may not be included. Email sroy@medqor.com to be considered for the next update.

Company	EnsoData	Itamar Medical
Software	EnsoSleep	CloudPAT, zzzPAT
Website	www.ensodata.com/ensosleep	itamar-medical.com
Description	EnsoData uses artificial intelligence (AI) technology to perform complex, time-consuming data interpretation of HSAT and PSG sleep studies. EnsoSleep is an AI-assisted scoring solution that automates event detection and eases clinician review. Standardization of scored studies leads to consistent results, reduced time spent scoring studies, and provides opportunities to expand care and improve outcomes.	WatchPAT tests are analyzed by the clinically-validated algorithm in either standalone software (zzzPAT) or via CloudPAT. An auto report details sleep architecture, sleep efficiency, sleep latency, REM and nonREM-related apnea events. Every study can then be manually edited based upon concretized rules from a *JCSM* published study, called COMPASS.
Algorithm	EnsoSleep's AI has been trained on RPSGT-scored sleep studies, which allows it to score more like a human and less like a computer.	Differentiates sleep from wake via clinically-validated actigraphy and for epochs scored as sleep, the algorithm determines REM and light-deep sleep based upon PAT signal and pulse rate to differentiate sympathetic vs parasympathetic predomination. Respiratory events scored based on PAT, HR, oxygen desaturations, actigraphy, and snores as outlined in the clinical literature.
Hardware Compatibility	EnsoSleep supports most devices; contact EnsoData to confirm compatibility with your platform	ZzzPAT, CloudPAT, and other sleep EMRs (such as Somnoware) are compatible with all WatchPAT devices
Validation Study	Fernandez C, et al. A cross-validation approach to inter-scorer reliability assessment. *SLEEP*. 2018;41(Abstract suppl):A122-3.	Yalamanchali S, et al. Diagnosis of obstructive sleep apnea by peripheral arterial tonometry: a meta-analysis. *JAMA Otolaryngol Head Neck Surg*. 2013 Dec;139(12):1343-50.
Pricing Structure	Transparent pricing that scales with monthly volume starting at $16.50/PSG and $8.25/HSAT	Contact Itamar
Time to Score/Study	On average, HSTs are ready to view in 5 minutes and PSGs in 10 minutes	~1 minute
Year Software Introduced	2017 (FDA clearance)	2011 (CloudPAT), 2001 (zzzPAT)
Current Software Version	2021, March (updated monthly)	2021, April (CloudPAT) and March (zzzPAT)
Duration of Included Software Updates	Unlimited updates included	Lifetime
Scoring Parameters/Data Points in Default Report	EnsoSleep is an FDA cleared, software-only medical device to be used under the supervision of a clinician to analyze physiological signals and automatically score sleep study results, including the staging of sleep, detection of arousals, leg movements, and sleep-disordered breathing events including obstructive apneas	AHI, RDI, ODI (REM, NREM, & Overall), cAHI, %CSR, True Sleep Time, Sleep Staging, Snoring (decibels), Body Position, Mean & Nadir Oxygen Saturation, Pulse Rate, % REM of Sleep Time, Sleep Latency
Unique Measurements/Data Analysis Provided	Automatically performs an ISR analysis as well as sleep study review time calculations for each study—these parameters provide a deeper insight into each scorer's performance on a day-to-day basis and can be aggregated and viewed over time	Sleep Efficiency, Total Sleep Time and Sleep Staging as a % of Light, Deep, and REM, Sleep Latency, REM Latency and Number of Awakenings
Onboarding	Customer success (CS) team leads 4-6 week onboarding and implementation process. Installation takes less than 45 minutes and integrates your current process. CS team conducts quality assurance for two weeks using recently-scored studies compared to EnsoSleep's standard scoring. Then the customer begins scoring live tests with EnsoSleep. The CS team continues to meet with the customer every week for 4 weeks.	Local sales and clinical team do on-site/virtual training.
Tech Support	Email and phone support 9 am to 5 pm CT (additional support outside those hours as available).	Email and phone support available 24/7.

Company	Nox Medical	SleepImage
Software	Noxturnal Software	SleepImage
Website	www.noxmedical.com	www.sleepimage.com
Description	The Noxturnal Software unleashes the full potential of the Nox recording systems. Offering automatic analysis, scoring, and advanced reporting tools, Noxturnal is a powerful tool in the hands of any clinician. Easy-to-use software with customizable setup of automatic analysis, great overview via recording results page, customizable workspace layouts and reports.	The SleepImage System is FDA-cleared HIPAA compliant cloud-based Software as a Medical Device (SaMD) that analyzes data recorded with a single-sensor finger-worn recording device during sleep. SleepImage is cleared for healthcare professionals to diagnose sleep apnea (obstructive and central) and manage sleep disorder treatment in children and adults.
Algorithm	Noxturnal provides fast and efficient analysis of the patient's sleep study. The software has a range of algorithms, including Sleep Staging, Arousal Detection, AHI, Snoring, PLM, and more. In recent publications, its respiratory analysis has been shown to be accurate and reliable when compared to a manually scored AHI.	The SleepImage technology is based on cardiopulmonary coupling that has been extensively explained in peer-reviewed publications and is featured in medical textbooks on sleep medicine, including its own chapter in *Principles and Practice of Sleep Medicine, 6th Ed* [Kryger, Roth, Dement, Elseiver 2017].
Hardware Compatibility	Nox recording systems such as Nox T3s, Nox A1, Nox T3, as well as Nox consumables such as Nox RIP belts and Nox cannula	SleepImage technology utilizes single-sensor ring recorders sold by SleepImage with no consumables required to collect data that is streamed to an app on the patient's phone
Validation Study	Xu L, et al. Validation of the Nox-T3 portable monitor for diagnosis of obstructive sleep apnea in Chinese adults. *J Clin Sleep Med.* 2017 May 15;13(5):675-83.	https://sleepimage.com/science
Pricing Structure	Demo and price available upon request	Pricing per study (from $29.98) with no minimum commitment or upfront cost, with volume discounts available OR pricing per patient to meet reimbursement guidelines for remote patient monitoring
Time to Score/Study	2 minutes	N/A (automatically analyzes and displays output)
Year Software Introduced	2009	2009 (FDA cleared), 2017 (updated to become software as a medical device), 2019 (updated to include an AHI from single-sensor recorders)
Current Software Version	2021, March	2021, March
Duration of Included Software Updates	Unlimited updates included	N/A (users buy access, not the software itself)
Scoring Parameters/Data Points in Default Report	Sleep Stages and Arousal, Respiratory Parameters, Signal Quality, Oxygen Saturation,Position and Analysis Time, Cardiac Events, PLM information (if recorded)	Sleep Quality, Sleep Duration (latency, duration, efficiency, total sleep time (TST), WASO, Cardiovascular Affect of Poor Sleep Quality & Sleep Apnea (Sleep Apnea Indicator), Fragmentation (Autonomic Arousals), Periodicity (Periodic Breathing, Cheyne-Stokes Respiration), sAHI that is FDA-cleared to be comparable to manual scoring of AHI from PSG studies for children and adults with both obstructive and central apnea reported, as well as all SpO_2 metrics that are normally included in sleep reports
Unique Measurements/ Data Analysis Provided	Nox BodySleep (not available in US), Sleep Staging and Arousal Detection Snoring Detection via Microphone, Chain of Custody (Single BodySource).	FDA-cleared to measure sleep quality that has been associated with health outcomes in peer-reviewed clinical publications that can be offered to all patients regardless of symptoms for sleep apnea
Onboarding	Onboarding and training available upon request.	Healthcare professionals can set up their online account at no cost without assistance required. Online onboarding is available if requested at support@sleepimage.com.
Tech Support	Email and phone support 9 am - 10 pm EDT. 10 pm - 9 am availability on-call services to support urgent matters. Weekend on-call support.	Email support@sleepimage.com and receive a response no later than during business hours on the following business day after receipt. ●