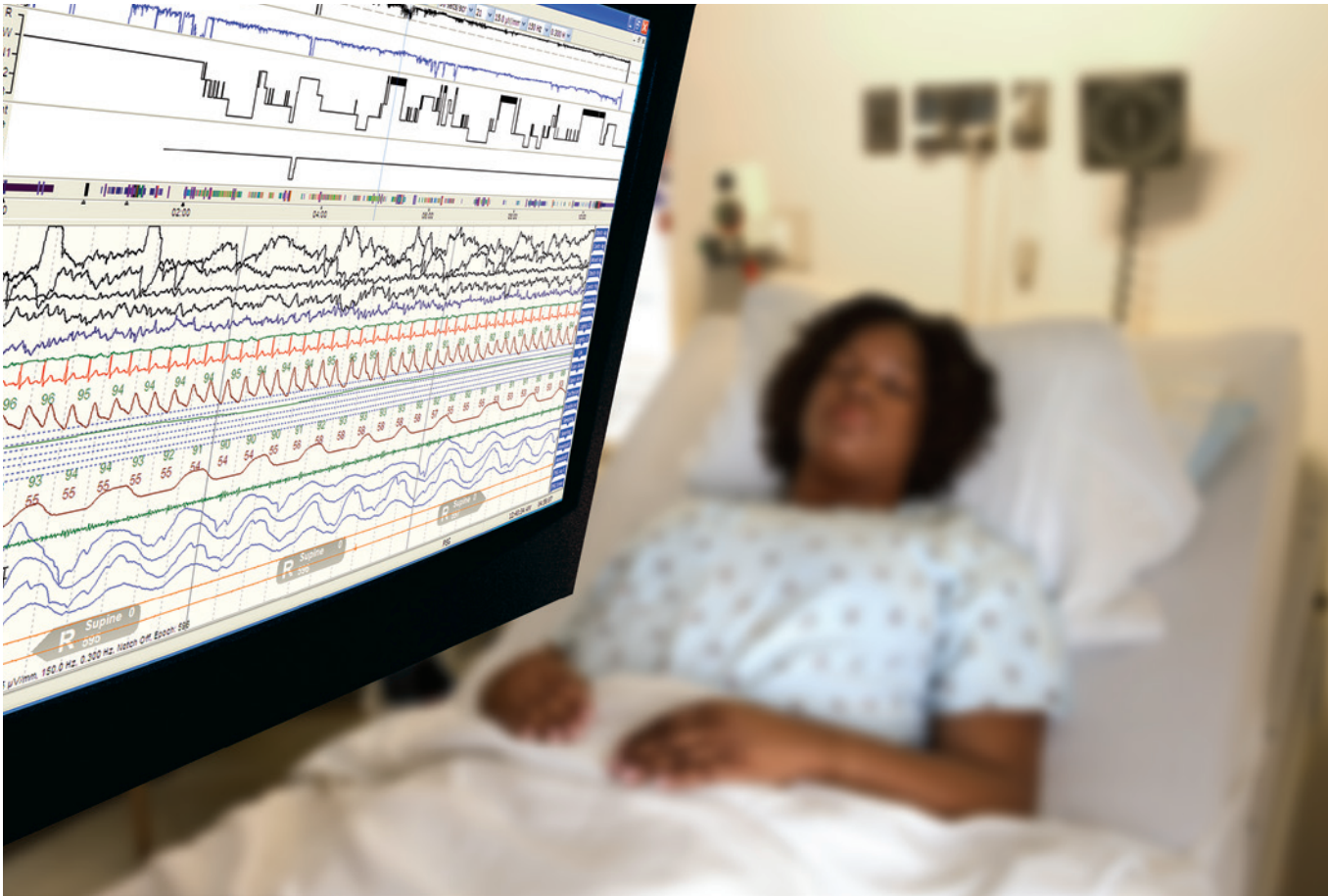


Nicolet™ Diagnostic Sleep System

Patient and Clinician Focused Technology & Intelligence



Unique Features and Trusted Data

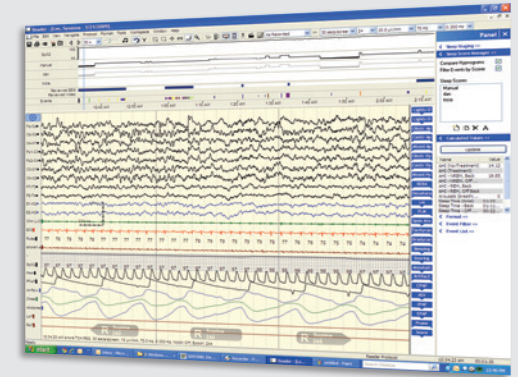
The Nicolet Diagnostic Sleep System plays an important role in diagnosing sleep-related disorders, giving clinicians full-featured polysomnography tools. Some of the features that increase functionality and are designed to provide greater clinical efficiencies include:

- Single software platform –
PSG by night, EEG by day
- Remote data access
- High data quality

Software features increase functionality and are designed to provide greater clinical efficiencies

Multimodality NicoletOne™ software with PSG analysis tools allows easy data collection, scoring and interpretation. Other features include:

- Customized sleep-event palette
- Automated staging and event-detection parameters
- Automatic detections for PLM's, sleep staging, body position, desaturation, apneas, RR interval
- "One-click" event scoring
- Arousal is automatically included when scoring RERA's
- Real time scoring during acquisition or previously acquired studies during acquisition of another
- Physician review enhanced by outstanding software features and performance
- Calibration bar for enhanced publications
- Analysis tools allow easy measurement of frequencies, duration and amplitude for more effective scoring
- Channel cursor zoom bar assists in easy waveform measurements
- Full PSG and EEG capability
- Customizable screen layout
- EEG trending software includes Relative and Absolute Band Power, Total Power, Spectrogram and more
- Exceptional channel re-order comparative tool
- Customizable alerts for low SpO₂, Heart Rate, ETCO₂, pH
- Drop and Drag channel or groups of channels
- "On the fly" re-reference ability

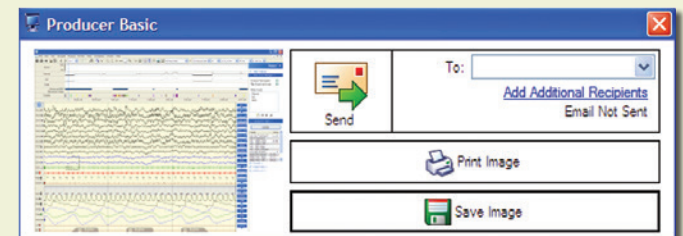


Reports assist for accurate diagnosis

Caregivers may feel more confident they are delivering the best care after efficiently analyzing patient information with world-class EEG analysis and Alerts tools. Unique features that complement the Nicolet Sleep System include:

- Extensive sleep report options
- Exceptional Inter Rater Reliability Report
- Automated periodic "sleep check timer" with minimum and maximum SpO₂ and heart rate, sleep stage changes and any body position changes since last sleep check. Includes a comment box for technician commentary, reducing paperwork
- Dynamic "mini-report" calculates values needed during acquisition for determining treatment decisions without manual documentation
- Producer feature allows email notification and attachments to facilitate faster response times
- EDF and EDF+ data format

NICOLET SAMPLE REPORT			
Sleep Center POLYSOMNOGRAPHY REPORT			
Name:	Doc: Jane	Gender:	M
MRN:	1234567	DOB:	8/27/1989
Study Date:	12/09/2012	Age:	24 years
Location:		WT:	40 kg
Study Specialist:	Sleep Doc, MD	Study #:	MT1234567-5
Referring Physician:	Respiratory Doc, MD	Technologist:	Sleep Tech, RPSGT
SLEEP SUMMARY			
Logins On:	8:00:00 AM		
Logins Off:	9:00:00 AM		
Time for Bed:	9:00:00 PM		
Total Sleep Time:	4:30:00		
WASO:	171:50		
Overall Latency:	11.3		
Number of awakenings:	10		
Total time awake:	4:34:00		
Sleep Efficiency:	50.4%		
Sleep Stage			
	Latency (min.)	Duration (min.)	% Sleep Time
Stage W1	0.0	00:30	15.1
Stage W2	0.0	1:30:00	50.4
Stage W3	22.5	01:00	16.4
W4	180.0	04:00	15.9
AROUSALS			
	# of Arousals		Index
Respiratory	12		12.0
PLM	0		0.0
Leg Movement	0		0.0
Non-respiratory	4		4.0
Total	16		16.0
RESPIRATORY EVENT SUMMARY:			
Event Type	Number	Shortest Event	Longest Event
Apnea	0	00:00	00:00
Obstructive	3	11.0 sec	20.0 sec
Central	0	00:00	00:00
Complex	0	00:00	00:00
Hypopnea	50	5.5 sec	40.0 sec
Micro	7	4.0 sec	10.0 sec
Total Apneas + Hypopneas	50		
Overall AHI	20.1	REM AHI	10.50
Overall RDI	21.85	REM RDI	11.63
Obstructive AHI	20.1	Obstructive RDI	11.63
RESPIRATORY EVENTS BY POSITION:			
Position	Time	Overall Apneas + Hypopneas + RERAs	Total
Supine			
Side			
Prone			



Calculated Values	
Update	
Name	Value
AHI (No-Treatment)	14.12
AHI (Treatment)	
AHI - NREM, Back	19.85
AHI - NREM, Off Back	
AHI - REM, Back	
AHI - REM, Off Back	
Arousals (breathing)/hr - ...	0
Sleep Time (total)	01:33:30
Sleep Time - Back	01:11:30
Sleep Time - Off Back	00:22:00
Sleep Time - REM	00:15:30

Amplifier features that can improve the clinician experience

The Nicolet Wireless Amplifier is a sophisticated, superior and flexible device that offers full band EEG combined with wireless technology to bring you a higher level of data integrity and accuracy. Big on performance and flexibility – but compact in size – this multi-faceted platform consolidates many features into a single multi-function unit, enabling a variety of clinical and video EEG, sleep and LTM studies in ambulatory, research and clinical settings. The most popular features include:

- Exceptional data quality that features easy waveform viewing and signal identification
- Ability to perform impedance test and see results at the headbox facilitates quick clinical intervention
- Glow in the dark headbox labels allow easy viewing in dim light
- One of the industry's best CMRR (>110 dB) for low noise and artifact rejection
- Software configurable bi-polar inputs simplify connection of patient sensors (i.e. respiratory)

The Nicolet Wireless Amplifier adds additional features:

- Wireless technology allows improved patient mobility
- Nine bipolar channels
- DC expansion box provides 8 high level DC inputs
- On-board memory for continuous recording between MSLT naps or during transport

A Choice of Nicolet Amplifiers:



The Nicolet Wireless Amplifier

- Wireless 802.11 technology
- Integrated SpO₂
- Impedance check from the head box or software
- 32 or 64 channels

The Nicolet v44 Amplifier:

- 12 high level DC inputs
- Integrated SpO₂
- SpO₂ Pleth waveform available
- Impedance check from the patient room or control room

Multiple Sleep Latency Report

⌵ Hospital Name

My Hospital

⌵ Today's Date

2/19/2011 1:01:52 PM

⌵ Patient/Test Information

Test ID:

W120110-MSLT

Weight:

Patient ID:

6296752

Height:

Last Name:

Doe

BMI:

First Name:

Jane

Referring Physician:

Interpreting Physician:

Scoring Technician:

Gender:

Female

Acquiring Technologist:

Date of Birth:

8/4/1997

Recording Start:

History:

Recording End:

Age:

13 years

Total Recording Time:

Epworth Sleepiness:

Beck's Depression Inventory:

⌵ Naps overview

Number of Naps: 4

	Minimum	Maximum	Mean
Sleep Latency:	00:01:00	00:04:30	00:02:45

Naps with REM Episodes: 0

⌵ Nap(s)

Nap	Sleep Latency	REM (Y/N)
1	00:01:30	N
2	00:01:00	N
3	00:04:00	N
4	00:04:30	N

Conclusion

RESPIRATORY EVENT SUMMARY:			
Event Type	Number	Effective Count	Longest Event
Apnea	2	20.3 sec	27.0 sec
Hyperpnea	0	0.0 sec	0.0 sec
Respiratory Disturbance Index (RDI)	2		
RESPIRATORY EVENTS BY POSITION:			
Position	Event Type	Count	Percentage
Back	Apnea	2	100%
Side	Apnea	0	0%
Supine	Apnea	0	0%
OXYGEN SATURATION			
Level	% Sat		
0	100%		
1	99%		
2	98%		
3	97%		
4	96%		
5	95%		
6	94%		
7	93%		
8	92%		
9	91%		
10	90%		
11	89%		
12	88%		
13	87%		
14	86%		
15	85%		
16	84%		
17	83%		
18	82%		
19	81%		
20	80%		
21	79%		
22	78%		
23	77%		
24	76%		
25	75%		
26	74%		
27	73%		
28	72%		
29	71%		
30	70%		
31	69%		
32	68%		
33	67%		
34	66%		
35	65%		
36	64%		
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81	19%		
82	18%		
83	17%		
84	16%		
85	15%		
86	14%		
87	13%		
88	12%		
89	11%		
90	10%		
91	9%		
92	8%		
93	7%		
94	6%		
95	5%		
96	4%		
97	3%		
98	2%		
99	1%		
100	0%		

Name:	JaneDoe	MR#	1094407						
		Study date:	12/09/2010						
CPAP Summary:									
Level (IPAP/EPAP)	O2 Level	Duration (hrs)	Sleep Time (hrs)	Supine Time	Sleep Efficiency	REM (hrs)	PLM #(Index)	Arousal #(Index)	
0		04:44:22	02:26:39	02:26:39	51.5679	00:07:02	3 (0.0)	65 (26.6)	
4		01:15:26	00:03:42	00:04:00	4.9153		0 (0.0)	1 (16.2)	
8		00:45:12	00:44:12	00:44:00	97.7879	00:03:30	0 (0.0)	9 (12.2)	
9		01:46:30	01:03:25	01:03:30	59.5416	00:13:05	0 (0.0)	12 (12.3)	
10		00:37:34	00:19:10	00:19:00	51.0109	00:19:10	0 (0.0)	2 (6.3)	
Level (IPAP/EPAP)	O2 Level	CA	MA	OA	OH	RERA	AHI	RDI	SpO2 Min
0							35.2	37.6	77
4							0.0	0.0	93
8							0.0	0.0	93
9							2.8	2.8	89
10					3 (2.8)		12.5	15.7	86
				4 (12.5)	1 (3.1)				
Name:	JaneDoe	MR#	1094407						
		Study date:	12/09/2010						

Connectivity enhances diagnostic capabilities

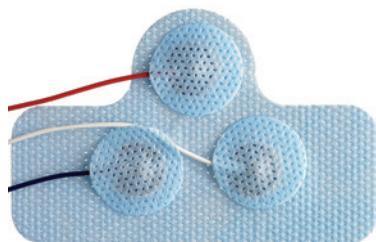
The NicoletOne multimodality software brings caregivers a dynamic user interface that supports lab efficiency and productivity in a single system or an enterprise network with satellite locations. The NicVue SQL data management system coupled with our HL7 interface options and VLink support system provide pioneering solutions to assist you in providing quality patient care.

A growing list of sleep supplies

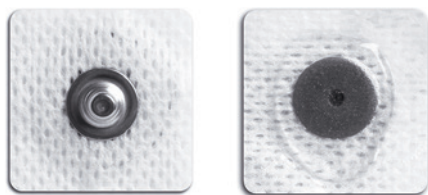
Nicolet has added over 100 new sleep supplies from Nonin®, Pro-Tech® and Dymedix.* Contact your area sales representative today for more information.



ZRIIP Driver Module



Chin Electrodes*



Disposable Center Snap Square Electrodes



Gold Cup Electrodes

* Not for sale outside the U.S.



World-class customer support

Rely on Nicolet Brand Products for world-class customer support, extensive service capabilities, advanced training opportunities and reliable customer care... all necessary to help maximize your investment. With a large and experienced staff, you are provided the professional assistance you need, when you need it.

Nicolet™

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www.natus.com

natus.
neurology

Technical Specifications

General Specifications

System Configurations

Sleep, EEG, ICU monitoring and LTM

OR and non-OR applications

Cart mount and wall mount options

Analog/Digital Converter 16 bits

ADC Resolution Voltage = 0.153 μ V

DC Offset Tolerance \pm 900 mV

Channels (AC Inputs) 32 EEG (9 configurable as bipolar (24-32) AC)
12 non-isolated DC inputs (\pm 5V, BW = 100 Hz)

Maximum Input Range \pm 5 mV

Bandwidth 0.053 - 500 Hz

Noise < 1.5 μ V p-p @ 0.1 - 100 Hz (except channels 31, 32 and OR channels, 95% samples < 2 μ V p-p@0.1 - 100 Hz)

Input Impedance > 100 M Ω (common mode)

CMRR at Patient Inputs > 115 dB @ 50 – 60 Hz, with active patient ground connected
(except channels 31, 32 and OR channels > 100 dB @ 50-60 Hz with RLD)

Channel Crosstalk < -40 dB

Amplifier Sample Rate (under software control) 125, 250, 500, 1000, 2000

Calibration Square wave, 1, 5, 10, 20 sec period, 10, 50, 100, 1000 μ V amplitude

Input Bias Current < 5 nA

Anti-Aliasing Filter Cut Off Frequency 500 Hz

Differential Input Impedance 40 M Ω

Interface to Amplifier Ethernet

Channel Hardware Gain 410

Deblock Yes

Integrated SpO₂

Channels (DC Inputs) 12 non-isolated

- Analog/Digital Converter 16 bits

- Maximum Input Range \pm 5V

- ADC Resolution 153 μ V

- Bandwidth DC – 100 Hz

Additional Ports

- Panasonic Camera Control port on amplifier

- Isolated SpO₂

- Isolated patient event button

- Photic output

Headboxes

v44 requires one of the following:

- Clinical headbox with built in impedance and display

- Clinical headbox with head cap adapter and built in impedance and display

- OR headbox



Quality System

Manufactured, designed, developed and marketed under ISO 13485 certified quality system

Compliance/Regulatory Standards

Designed, tested, manufactured and certified to meet the following domestic (USA), Canadian, European and International Standards:

UL 60601-1 Medical Electrical Safety Standard (USA)

CAN/CSA-C22.2 no. 601.1-M90 Medical Electrical Safety Standard (Canada)

EN/IEC 60601-1 Medical Electrical Safety of Medical Equipment (International and Europe)

IEC 60601-2-26 Particular Safety of electroencephalographs equipment

IEC 60601-2-40 Particular Safety of electromyography and evoked response equipment

EN 60601-1-2 Collateral safety standard for EMC

European Community (CE Mark)

Medical Device Directive (MDD) product certified to comply to EC Directive 93/42/EEC

Patient Isolation BF