natus neurology

Nicolet® Clinical EEG
Modular Neurodiagnostic System

Technical Specifications

General Specifications

Isolated Power Supply
110/115 or 230 VAC ± 10% input, 50 - 60 Hz
595 VA primary; 500 VA secondary
Output voltage = input voltage

Dimensions
Unibody cart approx. ..... 119 H x 53 W x 76 D cm (47" x 21" x 30")
Weight..... Unibody cart approx. 68kg (150 lbs.) (depending on model of printer)

Operating Environment (in use)
Temperature.....15.6 to 32.2° C, (60 to 90° F)
Relative humidity..... 20-80%, non-condensing
Altitude..... 0-3km, (0-10,000 ft)

Non-Operating Environment (in storage)
Temperature.....17.7 to 55° C, (0 to 132° F)
Relative humidity ..... 10-90%, non-condensing
Altitude..... 0-12km, (0-40,000 ft)

Computer

The Nicolet Clinical EEG system operates with a desktop computer. Please contact your Natus representative for the latest computer specifications.

Printout

HP DeskJet printer (black, white, and color)

Network

10/100/1000 Mb Ethernet (standard)
HL7 compatible through NicVue Connect interface

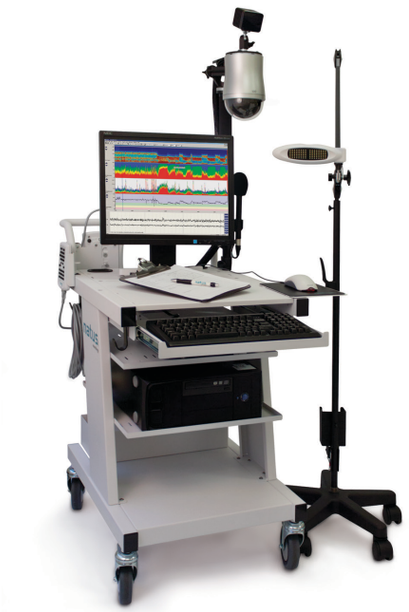
EEG software (with v32/v44 Amplifier)

EEG Display
Sec/Page..... 2, 5, 10, 20, 30, 60, 120, 240, 300, 600, 1200
mm/Sec 6, 8, 10, 15, 30, 60, 120, 240
Sensitivity..... 10, 20, 30, 50, 70, 100, 150, 200, 300, 500, 700, 1000, 2000, 5000 µV/cm
1, 2, 3, 5, 7, 10, 15, 20, 30, 50, 70, 100, 200, 500 µV/mm

High Filters
Off, 10, 15, 25, 30, 35, 40, 50, 60, 70, 100, 150, 200, 300, 500, 1000, 1500 Hz

Low Filters
Off, 0.053, 0.16, 0.3, 0.5, 1, 1.6, 2, 3, 5 Hz
0.2, 0.33, 0.5, 0.625, 1, 2, 3.3, 6.2, 18.9 seconds

Notch Filter .....Off, 50/60 Hz



v32 Amplifier

Analog/Digital Converter ..... 16 bits
ADC Resolution Voltage ..... = 0.153 µV
DC Offset Tolerance..... ± 340 mV
Channels (Inputs).... 32 EEG, configurable as bipolar AC (24-32), 1 configurable as DC (32)
Maximum Input Range ..... ± 5 mV
Bandwidth .....0.053 - 500 Hz
Noise..... < 1.5µV pk-pk @ 0.1 - 100 Hz
Input Impedance..... > 100 MΩ (common mode)
CMRR at Patient Inputs.....> 115 dB @ 50 – 60 Hz, with active patient ground connected
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 µV amplitude
Input Bias Current..... < 5 nA
Anti-Aliasing Filter Cut Off Frequency ..... 500 Hz
Differential Input Impedance ..... 40 MΩ
Interface to Amplifier ..... Ethernet

Built-in Impedance and Display
Headbox..... Optional; no impedance display

Additional Ports
- Isolated SpO_2 with X-Pod
- Photic output
- Isolated patient event button

Channel Hardware Gain.....410
Deblock.....Yes

Auxiliary Inputs
1 Hi-level, non-isolated input for connection of external devices (e.g. CO2 monitors, etc.)
Analog/Digital Converter ..... 16 bits
Maximum Input Range ..... ± 2.5V
ADC Resolution.....76.3 µV
Bandwidth ..... DC – 500 Hz

v44 Amplifier

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 µV
DC Offset Tolerance ..... ± 900 mV
Channels (AC Inputs) .....32 EEG, (9 configurable as bipolar (24-32) AC)
12 non-isolated DC inputs (± 5 V, BW = 100 Hz)
Maximum Input Range ..... ± 5 mV
Bandwidth .....0.053 - 500 Hz
Noise.....< 1.5µV p-p @ 0.1 - 100 Hz (except channels 31, 32 and OR channels < 2uV 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 µV amplitude
Input Bias Current .....< 5 nA
Anti-Aliasing Filter Cut Off Frequency .....500 Hz
Differential Input Impedance ..... 40 MΩ
Interface to Amplifier ..... Ethernet
Channel Hardware Gain.....410
Deblock.....Yes

Integrated SpO_2

Channels (DC Inputs): 12 non-isolated
- Analog/Digital converter: 16 bits
- Maximum input range: ± 5V
- ADC resolution: 153 µV
- Bandwidth: DC – 100 Hz

Additional Ports
- Panasonic camera control port on amplifier
- Isolated SpO_2
- 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

Interfaces with the Nicolet Ambulatory Module.
See Nicolet Ambulatory EEG Specifications Sheet #169-435300.

Quality Standards

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

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Specifications subject to change without notice.

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