

Natus® Embla® NDx Amplifier

Technical Specifications

Amplifier Inputs

AC Channels	64 AC channels, 6 Sensor inputs
Referential Inputs.....	40 referential + 24 programmable (from differential to ref)
Differential Inputs	Programmable up to 12
Sensor Inputs	6 (Chest, Abdomen, Snore, Airflow, Pressure, Position)
DC Channels (patient side).....	4 non-isolated
DC Channels (computer side).....	12 isolated
Photoc.....	Yes
Digital Trigger Input	8-bit TTL
Pulse Oximetry	SpO ₂ , Pulse Rate, PPG, Plethysmogram, Pulse Quality
Event Button	2 (Breakout and Base)
Headcap Input.....	25 Pin Connector

Analog Specifications

Input Impedance	Common Mode: ≥ 1 G Ω Differential Mode: ≥ 40 M Ω // 280 pF +/- 20%
Input Noise	≤ 2 μ Vpp (0.1Hz – 70 Hz)
Common Mode Rejection Ratio	≥ 106 dB min
Bandwidth	DC to 1600 Hz (default HFF is 0.08 Hz)
Input Signal Range (AC).....	20 mVpp, +/-0.3 VDC
Dedicated Sensor Inputs	Chest, Abdomen, Thermistor, Pressure Cannula, Position, Snore
Derived Traces	XSum, XFlow, XVolume, Phase, RMI, RespRate, Flow_DR, Snore_DR, Elevation, Activity, Position

Digital Specifications

Sampling Rates	256, 512, 1024, 2048, 4096 Hz
Sampling resolution	24 bits
Sampling Quantization.....	305nV
Storage Resolution	16 bits

PC Interface

Network	Gigabit Ethernet, DHCP
Direct	USB 2.0 Hi-Speed, Ethernet

Modes of Operation

Base Unit Fuse Type and Rating	Type T, 1.6 A / 250 V
Power	80 VA
Input	100 – 230 V, 50/60 Hz
Impedance Check	<2.5, <5, <10, <25 k Ω
Channel Test Signal	Software Controllable 0.25, 0.5 and 1 Hz; 10 – 2000 μ Vpp

Amplifier Mechanical

Base Unit Size (HxWxD)	29 x 26.5 x 5cm (11.4 x 10.4 x 2 in)
Base Unit Weight	2300 g (5.1 lb)
Breakout Box Size (HxWxD)	19 x 11.4 x 3.2 cm (7.5 x 4.5 x 1.25 in)
Breakout Box Weight	460 g (1 lb)
Base to Breakout Cable Length	5 m (15 ft) included, 10 m (30 ft) max (optional)



Natus Neuro

3150 Pleasant View Road
Middleton, WI 53562 USA
Tel: 1-800-356-0007
1-608-829-8500
Fax: 1-608-829-8709

www.natus.com

Natus Medical Incorporated

DBA Excel-Tech Ltd. (XLTEK)
2568 Bristol Circle
Oakville, Ontario, L6H 5S1 Canada
Tel: 1-800-387-7516
1-905-829-5300



Environmental Conditions for Use

Operating Environmental Limits

Temperature Range.....	10° – 30° C (50° – 86° F)
Relative Humidity Range	30% – 75%
Atmospheric Pressure Range	700 – 1060 kPa

Transport and Storage

Temperature Range.....	-25° – 60° C (-13° – 140° F)
Relative Humidity Range	10% – 95%
Atmospheric Pressure Range	500 – 1060 hPa

Regulatory Compliance

Safety

IEC 60601-1:2012 - General Safety Third Edition
CAN / CSA-C22.2 No. 60601-1: 08(R2013) +C2:2011
IEC 60601-1-6:2010 – Usability Third Edition
IEC 62366:2007, Edition 1.0
IEC 60601-2-26:2012 – Electroencephalographs Third Edition
IEC60601-2-61:2011 - Pulse Oximeters
EN ISO 80601-2-61:2011, Edition 1

EMC

IEC 60601-1-2:2014 – EMC Fourth Edition
IEC 61000-3-2:2014, Fourth Edition
IEC 61000-3-2 Harmonic emissions – Class A
IEC 61000-3-3:2013, Third Edition Voltage Fluctuations/ Flicker emissions
CISPR11, Edition 5.0 A1:2010 RF emissions – Group 1, Class A
IEC 61000-4-2:2008, Second Edition
IEC 61000-4-2 Electrostatic Discharge (ESD) ± 8 kV contact (to the patient lead and expose metal), ± 15 kV air
IEC 61000-4-3 Third Edition with A1:2007+A2:2010
IEC 61000-4-3, 3 Vrms, 80 MHz to 2.7 GHz
IEC 61000-4-4:2012, Third Edition, fast transient/burst ± 2 kV power supply ± 1 kV
IEC 61000-4-5:2014, Third Edition
IEC 61000-4-5 ± 1 kV Surge differential mode ± 2 kV common mode
IEC 61000-4-6 Second Edition with A1:2004 + A2:2006
IEC 61000-4-6, 150 kHz to 80 MHz
IEC 61000-4-8:2009, Second Edition
IEC 61000-4-8, Power frequency (50/60 Hz) magnetic field, 30 A/m