

Natus® Quantum® Amplifier

Technical Specifications

Part Number..... PK1173, PK1174
Use Cases..... High Channel LTM, Surface or Intracranial

Analog Specifications - AC Channels

Referential Channels..... 256
Differential Channels Up to 8 per 128 Breakout (112 Ref.)
Common Mode Rejection Ratio ≥ 106 dB @ 60 Hz
Input Impedance Common Mode: ≥ 1 G Ω
Differential Mode: ≥ 40 M Ω
Differential Input Range..... 20 mVpp
Input Noise < 2 uVpp (0.1Hz – 100 Hz)
Input Signal Range..... 20 mVpp \pm 0.3 VDC
Input Bias Current..... < 1 nA
Channel Crosstalk..... < -67 dB

Analog Specifications – DC Channels

DC Channels (patient side)..... 4 non-isolated
DC Channels (computer side)..... 12 isolated
DC Input Range..... ± 5 V

User Interface

Base Unit
Additional Connections..... Photoc Stimulator, Digital Trigger,
EMU40EX Breakout, Nicolet Cortical Stimulator
Event Switch Connection..... 1
Display Touchscreen LCD
Breakout Box
Additional Connections..... Event Switch, Nonin Xpod® Pulse Oximeter, SpO₂,
Cortical Stimulation input

Digital Specifications

Base Unit Fuse Type and Rating Type T, 1.6 A / 250 V
Sampling Frequency 256, 512, 1024, 2048, 4096, 8192, 16384 Hz
(512 Hz in Ambulatory mode)
Bandwidth DC to 4288Hz (default HFF is 0.08Hz)
Digital Trigger..... 8 bit TTL
Pulse Oximetry..... SpO₂, Plethysmography, Pulse Rate
Sampling Resolution 24 bits
Sampling Quantization..... 305 nV
Storage Resolution..... 16 bits



Modes of Operation

Recording Mode Tethered / Ambulatory
Ambulatory Mode ... 64 GB Internal memory, Autonomy minimum 2 h (External battery pack)
Power..... 80 VA
Input 100 – 230 V, 50/60 Hz
Impedance Check..... < 2.5 , < 5 , < 10 , < 25 k Ω
Channel Test Signal Software Controllable
Sine..... 5, 10, 20 Hz; 50, 100, 200 uVpp
Square 0.25, 0.5 and 1 Hz; 10 – 2000 μ Vpp

PC Interface

Network..... Gigabit Ethernet, DHCP or Static
Direct USB 2.0 Hi-Speed, Ethernet

Amplifier Mechanical

Base Unit Size (HxWxD) 29 x 26.5 x 5 cm (11.4 x 10.4 x 2 in)
Base Unit Weight 2300 g (5.1 lb)
Breakout Size (each) (HxWxD) 13.8 x 13.2 x 5.4 cm (5.4 x 5.2 x 2.1 in)
Breakout Weight (each)..... 708 g (1.56 lb)
Base to Breakout Cable Length..... 10 m (30 ft)

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

Regulatory Compliance

CAN / CSA-C22.2 No. 60601-1: 08(R2013) +C2:2011
ANSI / AAMI E560601-1: 2005/(R)2012 +C1: 2009/(R)2012 and A2: 2010/(R)2012
IEC 60601-1:2005 + C1: 2006 and C2:2007, 3rd Edition
IEC 60601-1-6: 2010, Edition 3.0, IEC 62366: 2007, Edition 1.0
IEC 60601-2-26: 2012, Edition 3
EN ISO 80601-2-61: 2011, Edition 1
IEC 60601-1-2: 2007, Edition 3.0
CISPR11, Edition 5.0 (with A1:2010)