

## Technical Specifications

### Amplifiers

Amplifier Options	3-, 6- or 8-channel amplifiers
Preamplifiers	Electrically isolated preamplifiers with software controlled interconnection of reference inputs
Amplifier # 1 - 3	Differential inputs with electrode cable capacitance reduction
Connector types	5 pin DIN connector and 1.5mm touch-proof input jacks
Amplifier # 4 - 6 or 4 - 8	Differential inputs
Connector types	1.5 mm touch-proof input jacks.
<b>Input Impedance</b>	
Differential	>200 M $\Omega$
Common Mode	>1000 M $\Omega$ /25 pF
Noise Level	Typical 0.4 $\mu$ V RMS (2 Hz - 10k Hz) shorted Input
Isolation Mode Rejection	>160 dB
Common Mode Rejection Ratio (CMRR)	>124 dB
<b>Sampling</b>	
Resolution	24 Bits
Rate	48 kHz per amplifier
<b>Lower Frequency Limits (-3dB)</b>	
Programmable	0.01 Hz - 3 kHz (16 steps)
<b>Upper Frequency Limits (-3dB)</b>	
Programmable	20 Hz - 13 kHz (12 steps)
Sensitivity	0.5 $\mu$ V/D - 20 mV/D (15 steps)
Display Sensitivity	0.05 $\mu$ V/D - 20 mV/D (18 steps)
Impedance Test of Electrodes	0.1 k $\Omega$ - 1 M $\Omega$
For 6 and 8 Amplifier Options Impedance indicators for each input pin and patient ground	

### Acquisition

Sweep Speeds	0.2 ms/D - 12 s/D (Test type dependant)
Delay Line	$\pm$ 500 ms (Test type dependant)
EMG Event Recording	Maximum 15 minutes per event

### Averager

Epochs	Autostop at maximum 10000 per Averager
Samples per Averager	4800

### Timing

<b>Trigger Mode</b>	
Stimulation Trigger	manual, repetitive or external
Repetition Rate	0.1 - 200 Hz
Extended set-ups with Pulse, Paired Pulse and Trains.	
All with user-definable configuration at fixed or random frequency.	
Dual stimulation with simultaneous or alternate mode.	
EMG trigger	signal and free run
<b>Stimulation Train</b>	
Number of pulses	1 - 1000
Frequency	0.1 - 200 Hz
<b>External Trigger Input</b>	
Pulse Form	5 V TTL-level, negative going duration min. 21 $\mu$ s
Stimulus Delay	2.5 ms
<b>External Trigger Output</b>	
Pulse Form	5 V TTL-level, negative going, duration min. 10 $\mu$ s



### Electrical Stimulator

Single Constant Current Stimulator	
Optional Dual Constant Current Stimulator	
Output Range	0 - 100 mA (software controlled)
Intensity Resolution	0.1/0.02 mA
Source Voltage	400 V
Output Resistance	>5 M $\Omega$
Stimulus Duration	20 $\mu$ s - 1 ms (9 steps)
<b>Safety Features</b>	
Power Limitation	Maximum mean power: 0.5 W

### Visual Stimulator

Pattern Type	Checkerboard, horizontal bars, vertical bars
Sizes	3x4, 6x8, 12x16, 24x32, 48x64, 96x128
Field Format	Full, left half, right half, upper right, lower right, upper left, lower left
Stimulus Type	Onset, reversal, goggles
Fix Point	4 types, movable
Background	Black, grey

### Auditory Stimulator

Stimulus Shapes	Clicks, Tone burst, Pips, Half Sine, Full Sine
Tone Burst	0 - 120 dB peSPL depending on signal frequency
Click	0 - 132 dB peSPL
Click Duration	50 or 100 $\mu$ s
<b>Max. Intensity</b>	
Software dependent	132 dB peSPL (1.0 dB Steps)
Masking	White, low pass, high pass, band stop filtered
Masking Level	-15 to 99 dB peSPL
<b>Headset</b>	
Calibration data is stored in headset	
Calibration	peSPL or NHL (software controlled)

## Typical Computer Performance

### Processor Performance

- 3.1 GHz Intel Core i5
- 4 GB RAM
- 500 GB Hard disk
- DVD-RW Drive
- 10/100 Mbit TP Network

### Display

Size ..... 22"

Resolution ..... 1680 x 1050

Operating System ..... Microsoft® Windows® 7 Ultimate

## Patient Safety

Isolation between mains and patient-applied parts >4 kV.

Complies with IEC 601-1, type BF specifications

## Power Supply

Mains Voltage ..... 100 - 240 V ~ 50/60 Hz

Power Consumption, incl. Isolated Power Outputs ..... Max 300 VA

Isolated Power Outlets ..... 100 - 120 V ~ max 7.4 A, 200 - 240 V ~ max 3.7 A

Patient Safety ..... Isolation between mains and patient-applied parts >4 kV

## Mechanical Data

Total Height ..... 1180 - 1310 mm (floor to top of display)

Width ..... 610 mm

Depth ..... 550 mm

Weight ..... 35 kg (cart system incl. arm and amplifier)

## Environmental Limits

### Operating

Temperature ..... +10° to +35° C

Relative Humidity ..... 20% to 80% (non-condensing)

Altitude ..... -15 m to 3000 m

### Storage

Temperature ..... -40° to +65° C

Relative Humidity ..... 20% to 80% (non-condensing)

Altitude ..... -15 m to 10600 m



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Specifications subject to change without notice.

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