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ROLAND CONSULT
Electrophysiology and Imaging

Where to meet us

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Electrophysiology and Imaging

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Device - RETI-port/scan 21

The RETI-port/scan 21 is an electrodiagnostic device used to generate stimulus signals and to display the electrical signals generated by the retina and the visual nerve system. The system is able to display digitized:

- Electroretinograms (ERG),
- Visually Evoked Potentials (VEP),
- Electrooculograms (EOG)

The data can be shown as measurement curves as well as spectral and topographical maps. The various examinations are performed by trained medical staff.

Features

All programs: ERG, VEP, EOG, mfERG according to ISCEV standards
– Possibility to create own programs
– Delivered with normal values and it is easy to integrate your own values
– Automated measurement of pupil size in ERG, EOG and mfERG
– Special fixation targets are available on the Stimulator Monitor for children
– Optimized screening ERG/VEP protocols for children
– Objective Visual Acuity Test with VEP
– S-Cone ERG, Photopic negative response ERG, ON-OFF ERG
– Early Glaucoma Screening Test with P-ERG
– Advanced Glaucoma follow-up with Contrast Flicker Test
– multifocal VEP
– The impedance test with shown image of the electrode position
– Automated artefact rejection in all protocols
– Artefact adjustment as absolute or relative values
– Automated analysis by placing the markers during the examination
– Digital filter for signal processing
– Possibility to integrate a typical curve in the analysis and on the printout
– PVEP and PERG can also be tested simultaneously
– Display of even and odd average results with calculation of the correlation factor
– Supplied with infrared EYE-Fixation Camera for patient monitoring
– Printout also in pdf format
– Work in the LAN, all data are available at the reading stations
– Export all data to EXCEL
– DICOM interface
– Service via Team Viewer

Clinical Applications Overview

Possible diagnosis	EOG	ERG	Bright Flash ERG	Pattern ERG	Flash VEP	Pattern VEP	Special VEP	mfVEP
Hereditary retinal dystrophies	x	x		x		x		
Vascular diseases/ diabetes		x		x		x		
Opaque media or traumas		x	x		x			
Retrobulbar Neuritis				x	x	x		
Unexplained loss of vision		x		x	x	x		
Child with questionable vision		x		x	x	x	x	
Albinism		x				x		
Toxic- or diet-related eye disease	x	x		x	x	x		
Glaucoma				x				x
Suspected intracranial lesion				x		x	x	

RETI-port/scan 21 Models

Models Protocols	basic	alpha	alpha plus	beta	beta plus	gamma	gamma plus	gamma plus²	delta plus	delta plus²
Pattern VEP	x	x	x	x	x	x	x	x	opt.	opt.
Pattern ERG	x	x	x	x	x	x	x	x	opt.	opt.
Flash VEP	opt.	x	x	x	x	x	x	x	opt.	opt.
Albino VEP 1 Channel	opt.	opt.	opt.	opt.	opt.	x	x	x	opt.	opt.
Flash ERG 1 Channel	n.a.	x	x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Flash ERG 2 Channel	n.a.	n.a.	n.a.	x	x	x	x	x	n.a.	n.a.
Photopic Negative Response	n.a.	n.a.	n.a.	x	x	x	x	x	n.a.	n.a.
ON-OFF Response	n.a.	n.a.	n.a.	opt.	opt.	x	x	x	n.a.	n.a.
S-Cone ERG	n.a.	n.a.	n.a.	opt.	opt.	x	x	x	n.a.	n.a.
EOG	n.a.	n.a.	n.a.	x	x	x	x	x	n.a.	n.a.
mfERG P	opt.	n.a.	x	n.a.	x	n.a.	n.a.	n.a.	x	n.a.
mfERG S	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x	x	n.a.	x
mfVEP	opt.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x	opt.	x
Visual Acuity	opt.	opt.	opt.	opt.	opt.	x	x	x	opt.	opt.
Glaucoma	n.a.	opt.	opt.	opt.	opt.	x	x	x	n.a.	n.a.
Scientific Tool Port	n.a.	n.a.	n.a.	n.a.	n.a.	x	x	x	n.a.	n.a.
Scientific Tool Scan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x	x	x	x

x... included n.a. ...not appiclable opt. ... optional

Models Hardware	basic	alpha	alpha plus	beta	beta plus	gamma	gamma plus	gamma plus²	delta plus	delta plus²
Stimulators										
Stimulator Monitor	x	x	x	x	x	x	x	x	x	x
Ganzfeld Q450C	n.a.	n.a.	n.a.	x	x	n.a.	n.a.	n.a.	n.a.	n.a.
Ganzfeld Q450 SC	n.a.	n.a.	n.a.	n.a.	n.a.	x	x	x	n.a.	n.a.
MINIganzfeld I8	n.a.	x	x	opt.	opt.	opt.	opt.	x	opt.	opt.
BABYflash E130	n.a.	opt.	opt.	opt.	opt.	opt.	opt.	x	opt.	opt.
Amplifier										
2 Channel	x	x	x	x	x	n.a.	n.a.	n.a.	x	n.a.
4 Channel	opt.	opt.	opt.	opt.	opt.	x	x	x	opt.	x
Eye-fixation camera										
LA-S	n.a.	opt.	x	opt.	x	opt.	opt.	opt.	x	x

x... included n.a. ...not appiclable opt. ... optional

Stimulators

BABYflash E130
– Flash Luminance: standard flash 3,0 cds/m² for white, blue, red
– Range: -40 dB to +10 dB in steps of 5 dB for white, blue, red
– Background: 30, 100 and 450 cd/m² for white,
10, 15, 20, 30 and 50 cd/m² for blue (470nm), red (625 nm)

MINIganzfeld I8
– Flash Luminance: standard flash 3,0 cds/m² for white
– Range: -25 dB to +10 dB in steps of 5 dB for white

Stimulator Monitor
– High Quality Brand industrial PC-System
– 19“ color-monitor, luminance max. 220 cd/m²; high contrast
– Checkerboards, bars fields: full, half or quarter
– Pattern reversal / appearance / disappearance
– Software controlled contrast settings (3 % - 99 %)
– Black and white or different color settings
– Variable fixation points, special pictures for children

BABYflash E130


MINIganzfeld I8

Ganzfeld Q450 SC/C

The Ganzfeld consists of the 400 mm full field globe, with the central fixation LED and two EOG fixation LEDs.
The brightness of these LEDs are computer controlled and an infrared camera is integrated.
There are two models Q450 C and Q450 SC.

Model Q450 C: white, blue, red
Model Q450 SC: white, blue, red, royal blue, green, amber
Flash Luminance white: standard flash 3,0 cds/m²
– Range -40 dB to +5 dB in steps of 5 dB
Flash Luminance color: standard flash 3,0 cds/m²
– Royal blue (455 nm) range -50 dB to -5 dB in steps of 5 dB
– Blue (470 nm) range -45 dB to 0 dB in steps of 5 dB
– Green (525 nm) range -45 dB to 0 dB in steps of 5 dB
– Amber (590 nm) interval -45 dB to 0 dB in steps of 5 dB
– Red (625 nm) interval -45 dB to 0 dB in steps of 5 dB
Stimulus ON-OFF:
– All colours: 1 ms to 1000 ms adjustable in steps of 1 ms
Background Luminance:
Option flimmer check according to Prof. Kremers
For each colour:
– Selectable waveform type: sine wave, rectangular
– Triangular wave, ramp up or ramp down
– Phase shift: 0˚-359˚ in steps of 1˚ – contrast 0,1 %-100 % in steps of 0,1 %
– Stimulation frequency 1 Hz-150 Hz adjustable in 1,0 Hz steps
– White: 1000 cd/m²
– Royal blue (455 nm): 100 cd/m²
– Blue (470 nm): 200 cd/m²
– Red (625 nm): 200 cd/m²
– Green (525 nm): 500 cd/m²
– Amber (590 nm): 750 cd/m²
Simultaneous use of all LEDs to generate different flash/background intensities and colors

Biosignal amplifier

– 2 or 4 channel
– Impedance 2 x 100 MΩ
– Common mode rejection >110 dB
– Sensitivity 10 µV/Div to 2 mV/Div
– Low pass: 0,02 Hz to 1 kHz, High pass: 30 Hz to 3 kHz

Operating Unit

– DELL Mini PC „State of the art“
– Software: Windows 10, Team Viewer

Ganzfeld Q450 SC/C