RETI-port/scan21 - Standard and Options

Programs	RETI-*port* gamma	RETI-*port* gamma plus	RETI-*port* gamma plus²	RETI-*scan*	RETI-*scan* science
Pattern-VEP	●	●	●	○	○
Pattern-ERG	●	●	●	○	○
Flash-VEP	●	●	●	○	○
Flash-ERG	●	●	●	○	○
EOG	●	●	●	○	○
Multifocal ERG	○	●	●	●	●
Multifocal VEP	○	○	●	○	●
Multifocal Science	○	●	●	●	●
Visual Acuity	●	●	●	○	○
Glaucoma Screening	●	●	●	○	○
Photopic negative response	●	●	●	○	○
ON-OFF Response	●	●	●	○	○
S-Cone ERG	●	●	●	○	○
Contrast Sensitivity	○	○	○	○	○
Nystagmography	○	○	○	○	○
EMG		○	○	○	○
Pupillometry	○	○	○	○	○

Stimulators					
Monitor	●	●	●	●	●
Ganzfeld Q450C	○	○	○	○	○
Ganzfeld Q450SC	●	●	●	○	○
Ganzfeld Q450SCX	○	○	○	○	○
Miniganzfeld	○	○	○	○	○
BABYflash	○	○	○	○	○
Flash Goggle	○	○	○	○	○
Pattern Handheld	○	○	○	○	○

Examinations					
ISCEV Standard	●	●	●	●	●
ISCEV and more	●	●	●	●	●
Scientific tool	●	●	●	●	●

Bio Signals					
2 Channels	○			●	
4 Channels	●	●	●	○	●
6 Channels	○	○	○	○	○
8 Channels	○	○	○	○	○

● Standard ○ Option

Summary of Indications for Specific Tests

Provisional Diagnosis	EOG	ERG	Bright Flash ERG	Pattern ERG	Flash VEP	Pattern VEP	Special VEP	mf VEP
Inherited retinal dystrophies	+	+		+		+		
Vascular diseases including diabetes		+		+		+		
Opaque media or trauma		+	+		+			
Retrobulbar neuritis				+	+	+		
Unexplained visual loss		+		+	+	+		
Infant with questionable vision		+		+	+	+	+	
Albinism		+					+	
Toxic and nutritional eye disease	+	+		+	+	+		
Glaucoma				+				+
Suspected intracranial lesion				+		+	+	

The **RETI**-*port/scan21*

Features:
- Delivery with standard ISCEV programs for ERG, PVEP, PERG, EOG, mfERG
- Additional programs: Visual Acuity, Glaucoma Screening, S-Cone ERG, Photopic negative response PVEP and PERG in the same time
- Possibility to create own programs
- Automated impedance test can start every time
- Automatically analyze with placing the markers during the examination
- Automatically artifact elimination in all programs also for mfERG and mfVEP
- EYE fixation camera during PVEP, PERG and mfERG / mfVEP
- Ganzfeld with 5 different colors and eye fixation camera
- Possibility to measure the pupil size automatically
- Optimized short screening tests for children
- Digital Filter for signal processing
- Offline averaging of single response
- Show typical curve in the analyze and printout mode
- Delivery with normal values, and it is easy to insert the own normal values
- Customize the print out
- Export all data to EXCEL
- Working in the LAN, Reader Stations
- Service via Team Viewer
- Possibility to combine the system with an SLO for fundus image and ERG, OCT, FA and AF image and ERG; OCT; FA and AF

Operating unit:
- taking account of the existing technological level
- Intel Core i5-2500 CPU (3.3 GHz), 2 GB RAM, HDD: 500 GB
- 24" TFT Control Monitor, Keyboard, Mouse, Color printer
- Software: MS Windows, Nero, Antivirus, Team-Viewer

Biosignal amplifier:
- 2, 4, 6 or 8 channel
- Impedance 2 x 100 MΩ,
- Common mode rejection >100 dB
- Gain up to 150.000
- Sensitivity 10µV/Div to 2 mV/Div
- High pass: 20 Hz to 10 kHz
- Low pass: 0,02 Hz to 1 kHz

Monitor Stimulator unit:
- High Quality Brand industrial PC-System
- 19" color-monitor, luminance 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

Ganzfeld Q450
The Ganzfeld consists of the 400mm 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 Q450C and Q450SC. The Xenon tube module (x) for high intensity flash is an option for both models.

Model Q450 C (X): white, blue, red
Model Q450 SC(X): 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: adjustable in 1,0 cd/m² 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 LED´s to generate different flash/background intensities and colors

Option X:
- Xenon tube for white high flash
- Flash Luminance: 9,5 cds/m² (+5 dB), 30 cds/m² (+10 dB), 95 cds/m² (+15 dB)

For the Model Ganzfeld Q450 SC (x) are more additional flexible settings possible.

Option Flimmer Check according Prof. Kremers: For each color:
- Selectable waveform type: sine wave, rectangular wave,
- 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

Option: Pupillometry
- Full field Ganzfeld stimulation
- Resolution time 33 ms (30 images per second)
- Resolution pupil size 0.1 mm
- Examination settings: Number of cycles, cycle time,
- record time, flash time, flash intensity, averaging of the cycles

OPTIONS
- **BABYflash**
  - Flash Luminance: standard flash 3,0 cds/m² white, red , blue
  - Range: -40 dB to +10 dB in steps of 5 dB
  - Background: 10, 30, 50, 100, 450 cd/m²
- **Miniganzfeld**
  - Flash Luminance: standard flash 3,0 cds/m² white
  - Range: -25dB to +10dB in steps of 5 dB
- **Pattern Handheld**
  - Checkerboard : 10x10 fields á 5x5 mm
  - Luminance 80 cd/m²; Pattern reversal
- **Monitor Calibration Tool**
  - Automatic Ganzfeld and Stimulator Monitor calibration via USB

ROLAND CONSULT
Electrophysiological diagnostic systems
Friedrich-Franz-Str.19, D-14770 Brandenburg/Germany
Phone: +49 (0)3381.8901034, Fax: +49 (0)3381.8902994
www.roland-consult.de, e-mail: info@roland-consult.de

17-04-1.8E

RETI-*port/scan21*

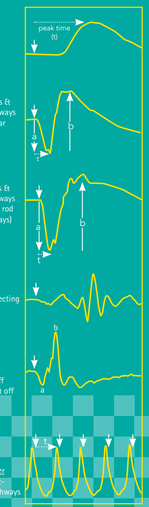
Made in Germany

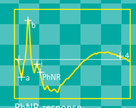
ALL IN ONE

ISCEV and more

ERG, VEP, EOG diagnostic for glaucoma, macula, retina and diabetic

one step forward!





Certification:
Quality Management System
EN ISO 13485
TÜV Rheinland CE 0197

ROLAND CONSULT
Electrophysiological diagnostic systems

RETI-*port/scan21* product overview

Electrophysiological Test Unit is usable for Pattern VEP + Pattern ERG + Flash VEP, for scotopic and photopic ERG, EOG fast and slow, mf ERG Flash stimulation and mf VEP Pattern stimulation. All ISCEV standards and guidelines are included.

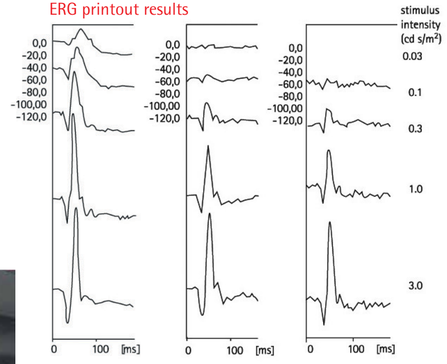
The Roland **RETI**-*port/scan21* unit consists of the stimulator units and data recording and analyzing system. The biosignal amplifier includes a preamplifier near the patient. All patient data and the results are stored in a database. The biosignal and averaged curves from all channels can displayed on the monitor. In the analyze mode the system set all markers and calculates all defined parameters automatically.

The software includes a lot of advanced features like FFT-analyse, OFF-line averaging, typical curves, digital filter and export functions.

Ganzfeld Q140
lifting table

tilting stand

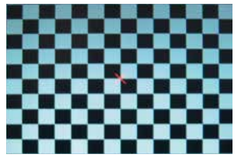
ERG printout results



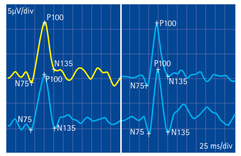
Automatic Ganzfeld and monitor calibration Mavo-monitor via USB

Measure pupil size

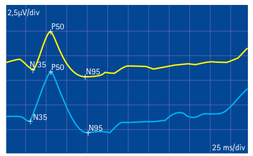
pattern stimulus ERG/VEP



pattern VEP

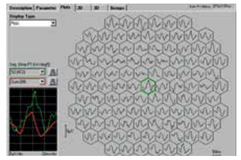


pattern ERG

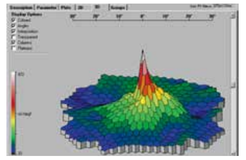


mfERG

normal mfERG plots



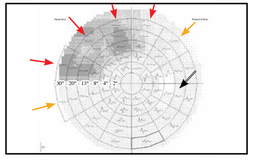
3D plot normal patient



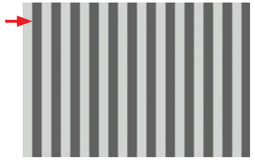
visualfield mfVEP (mf perimeter)

mfVEP plots

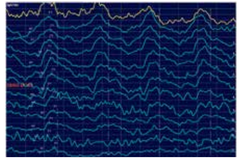
overlapping with visualfield



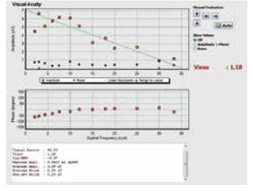
visual acuity



analyse curves

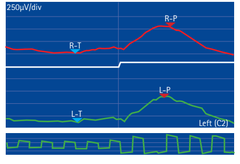


analyse regression curve

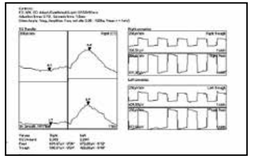


Ganzfeld Q450 EOG stimulus

EOG result

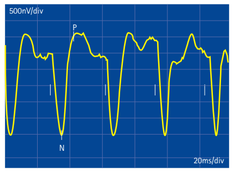


EOG printout normal result

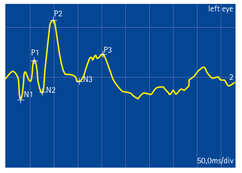


Pattern Handheld

steady state VEP

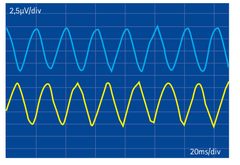


Transient VEP

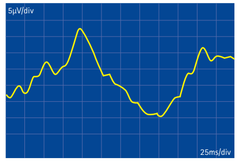


BABYflash ERG/VEP

steady state photopic 30 Hz ERG

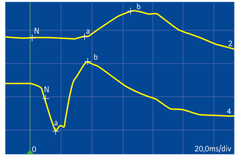


transient VEP

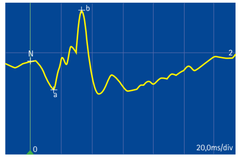


MINIganzfeld for flash ERG/VEP

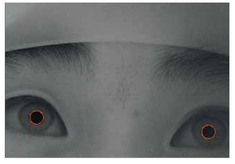
Scotopic ERG



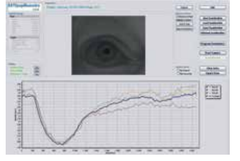
Photopic ERG



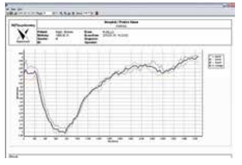
pupillometry



pupillometry measurement

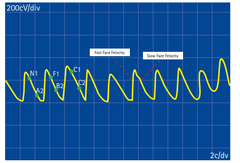


pupillometry result



nystagmography stimulus

nystagmography measurement left



nystagmography results