

The RETI-port/scan 21

Basic Setup											
Operating unit Windows 10											
	Models Protocols	basic	alpha	alpha plus	beta	beta plus	gamma	gamma plus	gamma plus2	delta plus	delta plus2
	Model-number	0	1	2	3	4	5	6	7	8	9
Pattern-VEP	●	●	●	●	●	●	●	●	●	○	○
Pattern-ERG	●	●	●	●	●	●	●	●	●	○	○
Flash-VEP	○	●	●	●	●	●	●	●	●	○	○
Albino VEP 1 Channel	○	○	○	○	○	○	●	●	●	○	○
Flash ERG 1 Channel	-	●	●	-	-	-	-	-	-	-	-
Flash ERG 2 Channel	-	-	-	●	●	●	●	●	●	-	-
Photopic Negative Resp.	-	-	-	●	●	●	●	●	●	-	-
ON-OFF Resp.	-	-	-	-	-	●	●	●	●	-	-
S-Cone ERG	-	-	-	-	-	●	●	●	●	-	-
EOG	-	-	-	●	●	●	●	●	●	-	-
Multifocal ERG P	-	○	●	○	●	-	-	-	-	●	-
Multifocal ERG S	-	-	○	○	○	-	●	●	○	○	●
Multifocal VEP	-	-	-	-	-	-	-	-	●	○	●
Visual Acuity	○	○	○	○	○	●	●	●	○	○	○
Glaucoma Screening	○	○	○	○	○	●	●	●	○	○	○
Nystagmography	○	○	○	○	○	○	○	○	○	○	○
Pupilometer	-	-	-	○	○	○	○	○	○	-	-
Scientific Tool Port	○	○	○	○	○	●	●	●	-	-	-
Scientific Tool Scan	-	-	○	-	○	-	●	●	●	●	●
Stimulators											
Monitor	●	●	●	●	●	●	●	●	●	●	●
Ganzfeld Q450C	-	-	-	●	●	-	-	-	-	-	-
Ganzfeld Q450SC	-	-	-	-	-	●	●	●	-	-	-
Miniganzfeld I8	-	●	●	○	○	○	○	○	○	○	○
BABYflash E130	-	○	○	○	○	○	○	○	○	○	○
Amplifier											
2 Channels	●	●	●	●	●	-	-	-	-	●	-
4 Channels	○	○	○	○	○	●	●	●	○	○	●

● Standards ○ Options - N.A.

The RETI-port/scan 21

Features:

- Delivered 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, mfVEP
- Ability to create individual custom
- Automated impedance test on each start
- Automatic analyze by placing the markers during the examination
- Automatic artifact elimination in all programs including 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 is easy to insert own normal values
- Customized print outs
- Export all data to EXCEL
- Working in the LAN, Reader Stations
- Service via Team Viewer

Operating unit:

- Laptop/Desktop - „State of the art“
- Software: Windows 10, Antivirus, Team Viewer
- Technical features improve in line with technical progress

Biosignal amplifier:

- 2 or 4 channel
- Impedance 2 x 100 MΩ
- Common mode rejection >110 dB
- Gain up to 150.000
- Sensitivity 10µV/Div to 2 mV/Div
- High pass: 30 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

Distributor:

Ganzfeld Q450

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:

- 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 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: Pupilometer

- 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 E130

- 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 I8

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

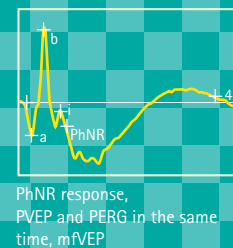
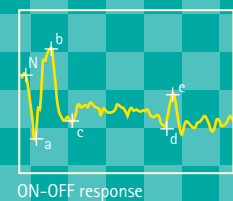
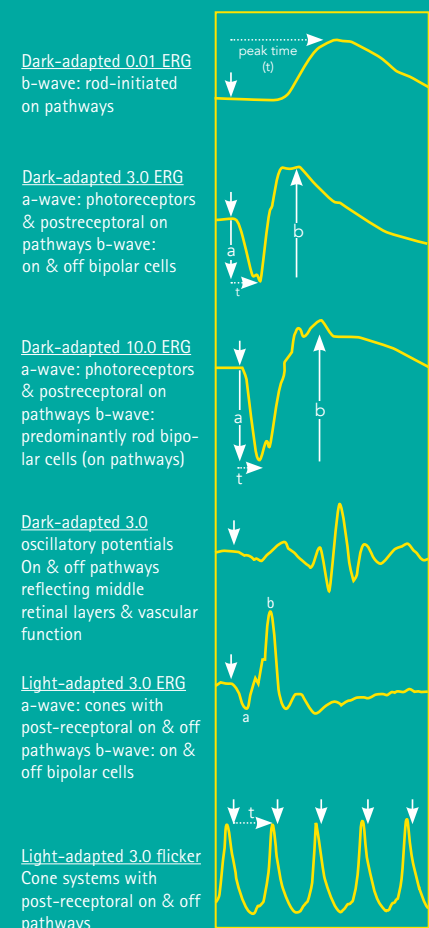
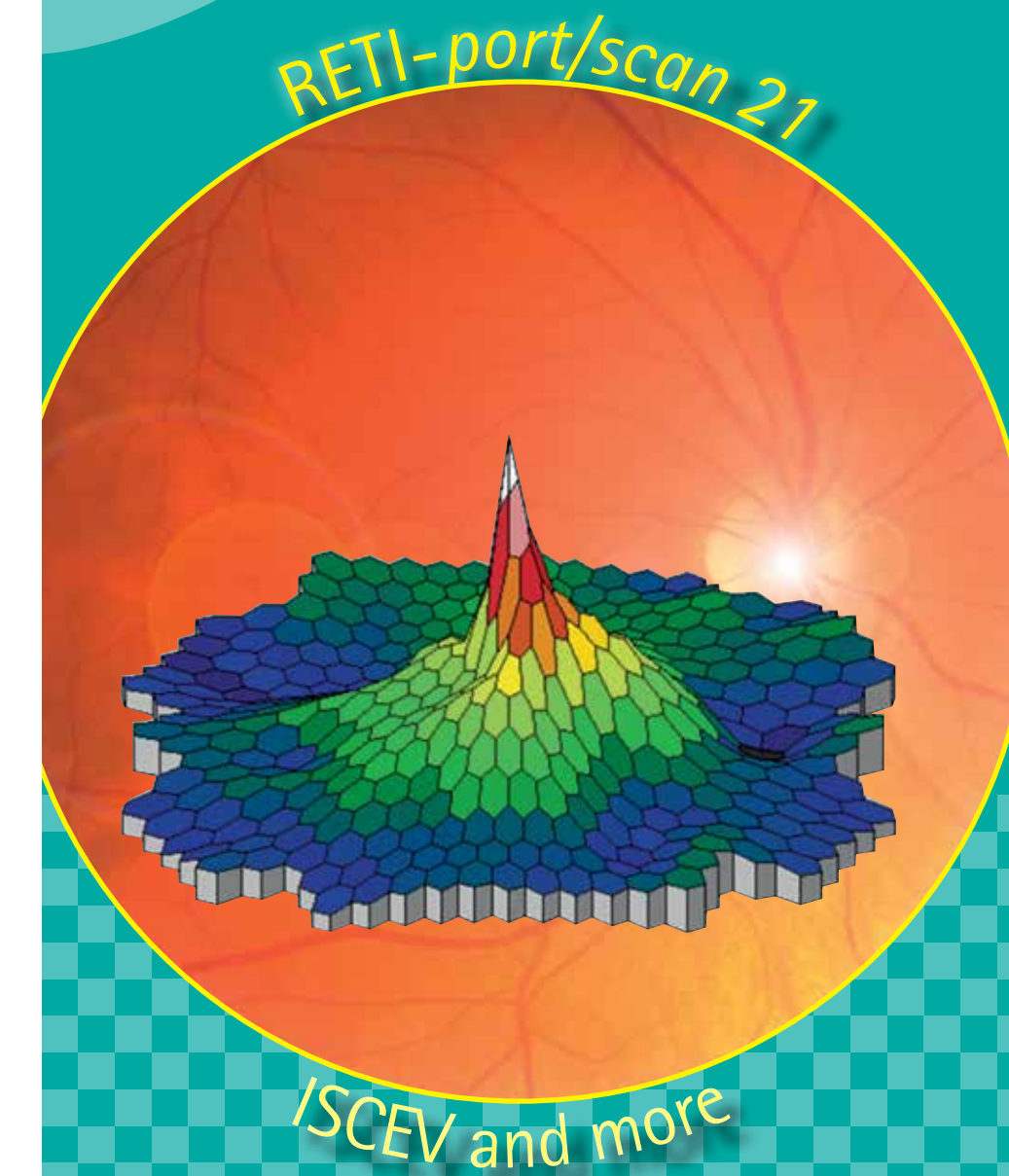
● Calibration Tool

- Automatic Ganzfeld and Stimulator Monitor calibration via USB

ERG · VEP · EOG · mfERG · mfVEP

ALL IN ONE

Made in Germany



PhNR response, PVEP and PERG in the same time, mfVEP

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Electrophysiology and Imaging

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ROLAND CONSULT
Electrophysiology and Imaging

RETI-port/scan 21 product overview

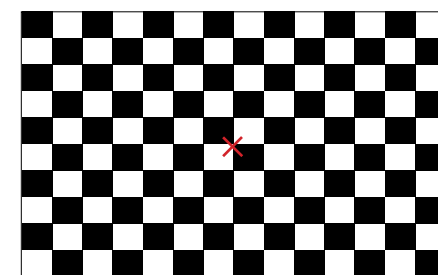
Electrophysiological Test Unit is usable for Pattern VEP + Pattern ERG + Flash VEP, for scotopic and photopic ERG, EOG fast and slow, mf ERG Flash stimulation and mf VEP Pattern stimulation. All ISCEV standards and guidelines are included.

The 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 be displayed on the monitor. In the analyze mode the system automatically sets all markers and calculates all the defined parameters.

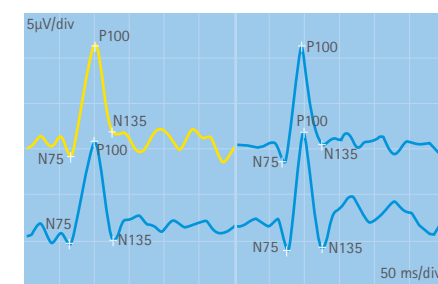
The Roland RETI-port/scan 21 unit includes the stimulator units and the data recording and analyzing system.

Summary of Indications for Specific Tests								
Diagnosis	EOG	mf 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		+	+		+			
Retrolubar neuritis				+	+	+		
Unexplained visual loss		+		+	+	+		
Infant with questionable vision		+		+	+	+	+	
Albinism		+					+	
Toxic and nutritional eye disease	+	+		+	+	+		
Glaucoma				+				+
Suspected intracranial lesion				+		+	+	

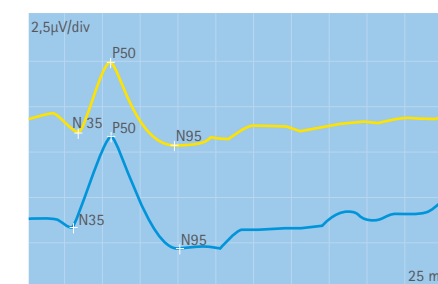
Pattern stimulus ERG/VEP



Pattern VEP



Pattern ERG



Tilting stand



Ganzfeld Q450 C / SC



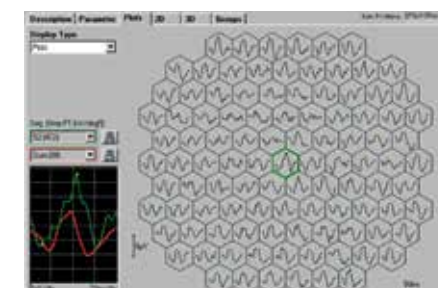
Calibration Tool



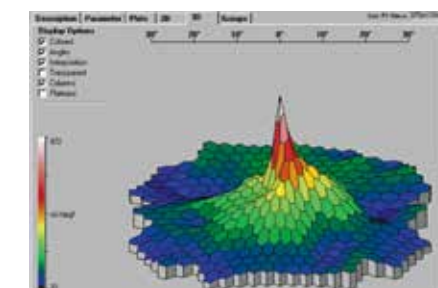
mfERG



Normal mfERG plots



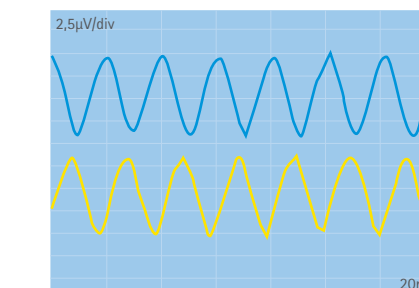
3D plot normal patient



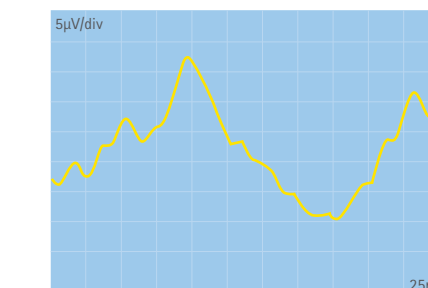
BABYflash E130 flash ERG/VEP



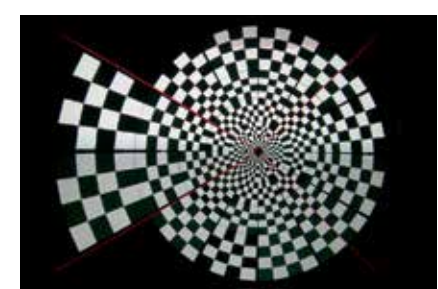
Steady state photopic 30 Hz ERG



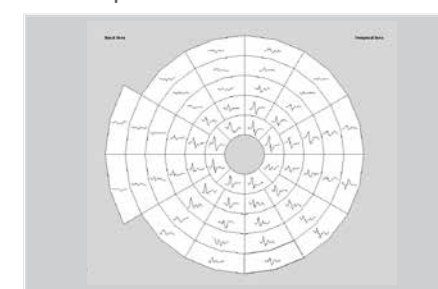
Transient VEP



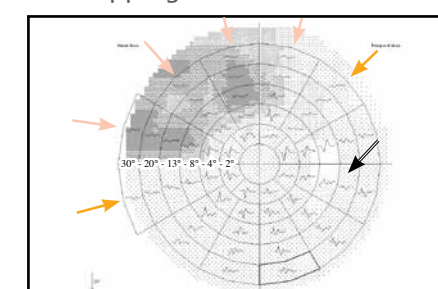
mfVEP



mfVEP plots



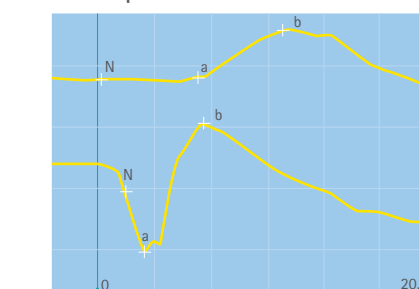
Overlapping with visualfield



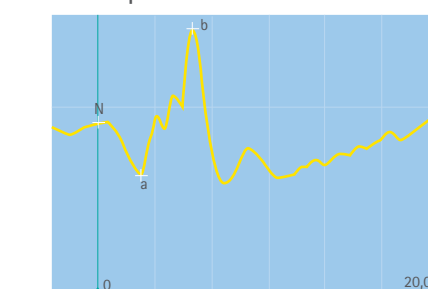
MINIganzzfeld I8 flash ERG/VEP



Scotopic ERG



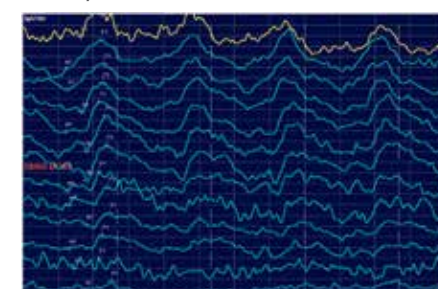
Photopic ERG



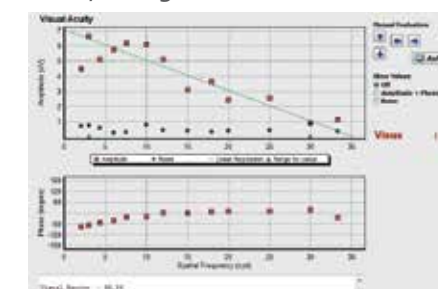
Visual acuity



Analyse curves



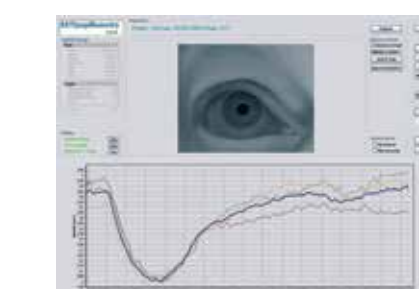
Analyse regression curve



Pupillometer



Pupillometer



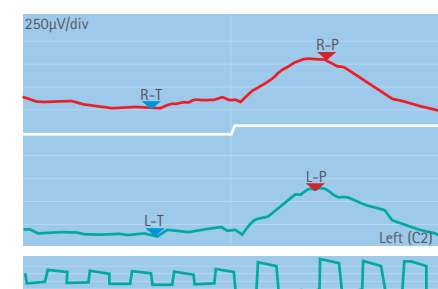
Pupillometer result



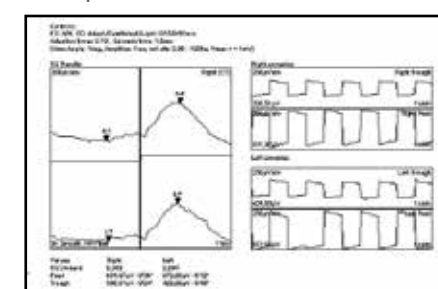
Ganzfeld Q450 EOG stimulus



EOG result



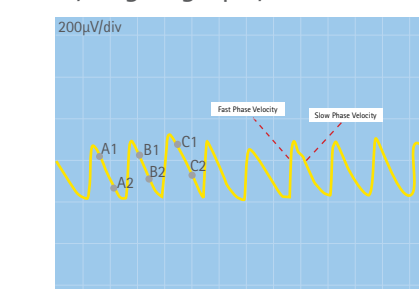
EOG printout normal result



Nystagmography stimulus



Nystagmography measurement left



Nystagmography results

