

The RETI-port/scan 21

Basic Setup										
Operating unit Windows 10										
Protocols Software Application	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	○	○	○	○	○	○	○	○	○	○
Pupilligraphy	-	-	-	○	○	○	○	○	●	-
Scientific Tool Port	○	○	○	○	○	●	●	●	-	-
Scientific Tool Scan	-	-	○	-	○	-	●	●	●	●
Stimulators										
Monitor	●	●	●	●	●	●	●	●	●	●
Ganzfeld Q450 C	-	-	-	●	●	-	-	-	-	-
Ganzfeld Q450 SC	-	-	-	-	-	●	●	●	-	-
MINI-ganzfeld I8	-	●	●	○	○	○	○	○	○	○
BABYflash E130	-	○	○	○	○	○	○	○	○	○
Amplifier										
2 Channels	●	●	●	●	●	-	-	-	●	-
4 Channels	○	○	○	○	○	●	●	●	○	●

● Standards ○ Option configuration, can not be retrofitted - not applicable

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:

- DELL Mini-PC i5, 4 GB RAM, 128 GB HDD, 256 GB SSD
- Technical features improve in line with technical progress
- Software: Windows 10, Antivirus, Team Viewer

Biosignal amplifier:

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

Monitor Stimulator unit:

- 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

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

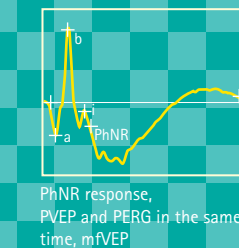
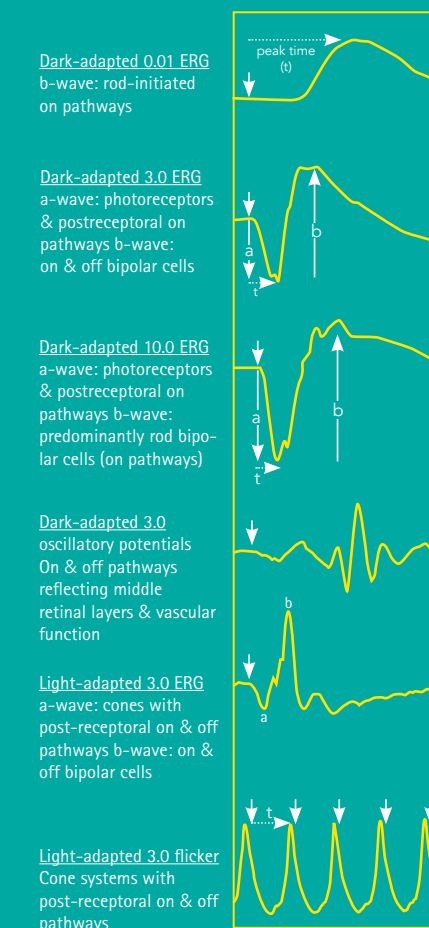
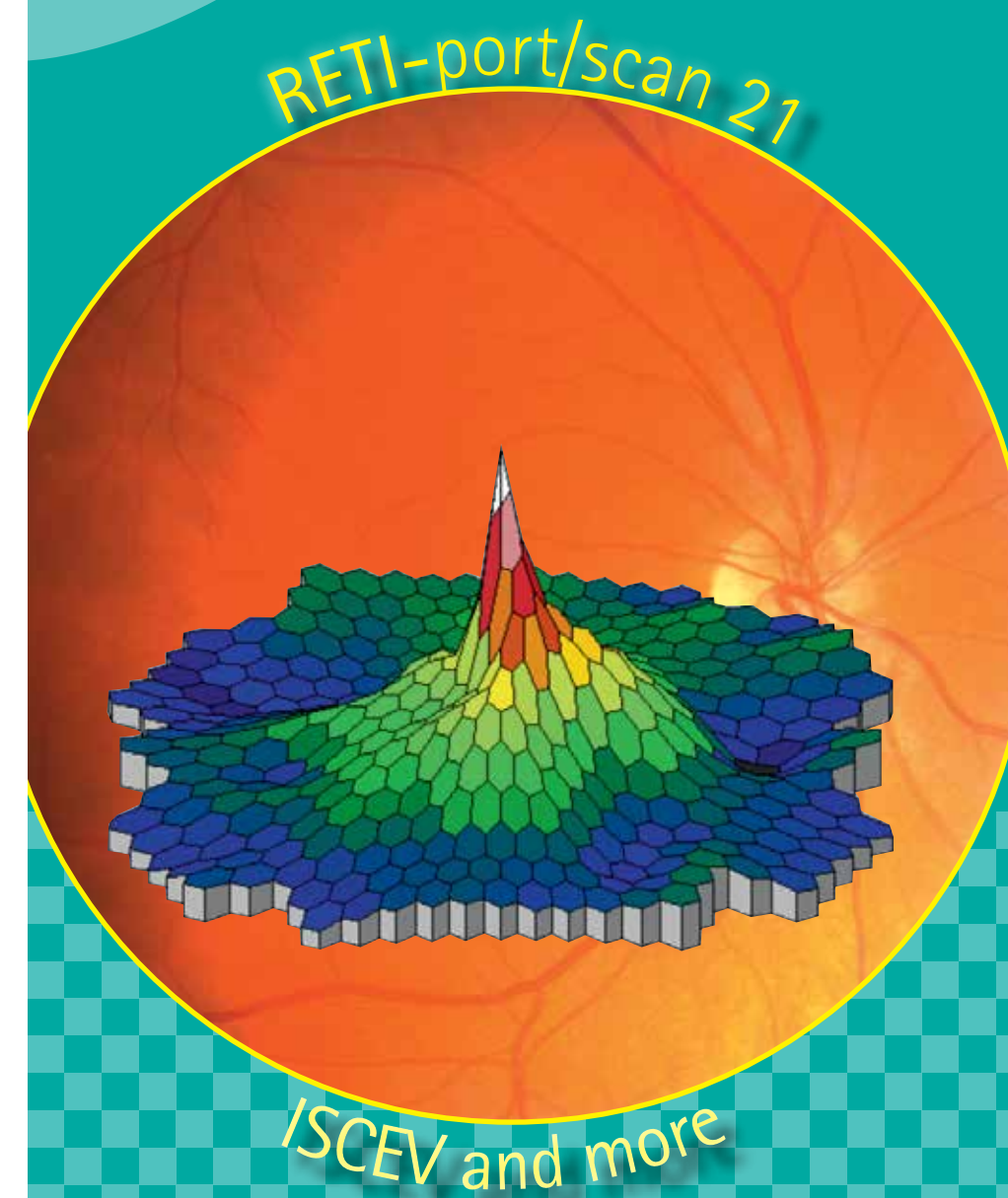
OPTIONS

- **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
- **MINI-ganzfeld 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



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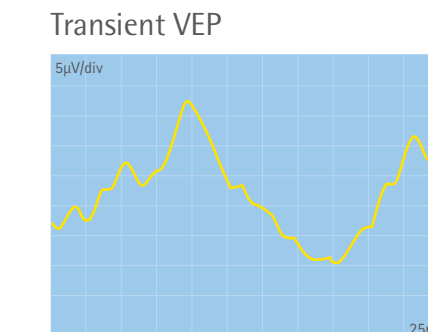
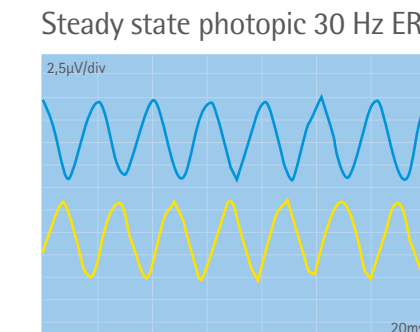
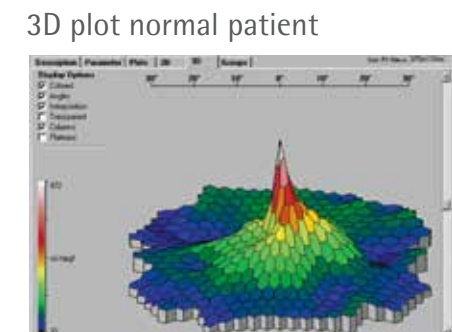
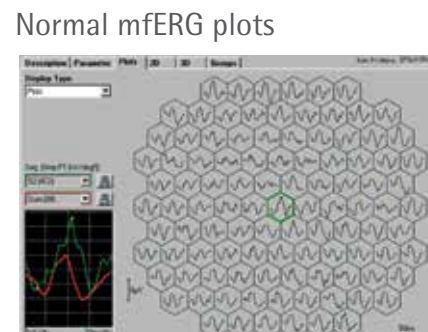
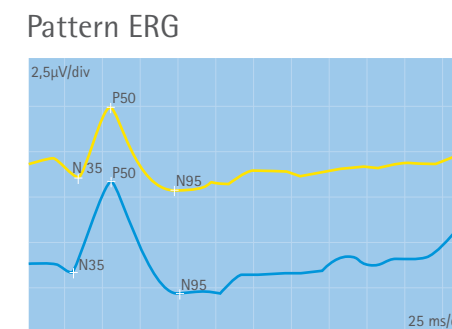
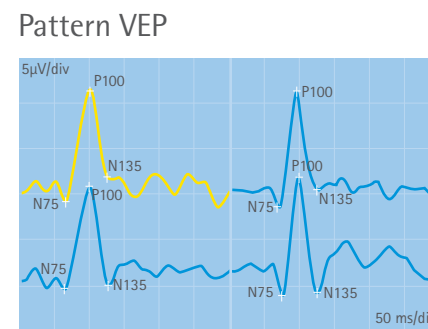
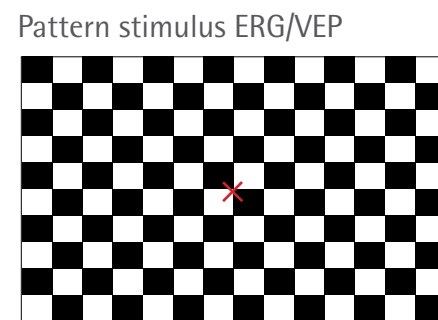
RETI-port/scan 21 product overview

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), Electronystagmography and the measurement of pupillary reactions. The data can be shown as measurement curves as well as spectral and topographical maps. The various examinations are performed by trained medical staff. The device RETI-port/scan 21 is used for functional diagnostics in ophthalmology. It is designed to create visual stimuli and to measure and display the resulting electro-physiological signals from the retina and the visual nervous system. These tests are helpful for objective diagnosis of visual defects.

Electrooculogram (EOG), Electronystagmography (ENG) and Pupilligraphy.

The RETI-port/scan 21 has a modular structure and allows flexible adaptation to the needs of the user. It consists of a combination of different components and stimulators, which differ depending on the model. The control and analysis software runs under a Windows-based computer system. All standard protocols are according to all standards of the International Society for Clinical Electrophysiology of Vision (ISCEV). We offer advanced protocols too and also the possibility to create own protocols. All patient data and the results are stored in a database. The bio-signal 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 following examinations can be carried out:
Electroretinogram (ERG), Visually evoked potentials (VEP),



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		+	+		+			
Retrobulbar neuritis				+	+	+		
Unexplained visual loss		+		+	+	+		
Infant with questionable vision		+		+	+	+	+	
Albinism		+					+	
Toxic and nutritional eye disease	+	+		+	+	+		
Glaucoma				+				+
Suspected intracranial lesion				+		+	+	

