

# RETeval™



## Handheld Visual Electrodiagnostic System ERG/VEP, Full Flash & Flicker

- Objective, functional data, critical to effective diagnosis.
- Delivered in minutes to the palm of your hand.
- Functionality at a price your practice can afford.

### Easy to Use

- Lightweight – 8.5 oz (240 g).
- Hand-held and battery powered.
- Clear reporting (device or PC).
- Simple joystick control.
- EMR interface (SDK).
- Multi-lingual.

### Enhanced Patient Comfort

- Electrodes integrated in LKC Sensor Strip – only one connection required.
- Non-mydriatic or mydriatic testing.
- Handheld device - can easily reach patients no matter where they are.
- LKC Sensor Strips are easy to apply and remove.

### Transformational Technology

- Real-time pupillometry adjusts flash and background intensity.
- Custom protocols (including randomized presentation order).
- Blink and electrode-disconnected detection for more reliable results.
- Built-in photometer ensures correct brightness and color of stimulation.

### World Class Service & Support

- Approved in 71 countries.
- 39 years' experience in ERG/VEP technology.



Infrared camera for visualization of eye during testing.



Increased patient comfort with LKC's patent-pending Sensor Strip electrode and patented real-time pupillometry.

## Available in two separately priced configurations:

**1 DR/CSME Assessment using skin Electrodes:** The Welch Allyn® RETeval – DR™, manufactured by LKC Technologies for Welch Allyn®, is available exclusively through Welch Allyn® outside of the United States.

OR

**2 RETeval Complete Option:** In addition to flicker testing, the complete option enable ISCEV-compliant 5 and 6 step protocols, flash VEP, photopic negative response, S-cone on-off, and much more! Use the LKC Sensor Strip skin electrode [95-068] or use any DIN electrode with the provided adapting cable.



Your choice of 17 language options.

## RETeval Device Specifications

| Light source  | Red LED (621 nm)   | Green LED (530 nm) | Blue LED (470 nm) | White (RGB) |
|---|--|--------------------|-------------------|-------------|
| Flash luminance energies (cd•s/m <sup>2</sup> )                                   | 0.0001 - 15  | 0.001 - 17         | 0.0001 - 5        | 0.002 - 30  |
| Background luminance (cd/m <sup>2</sup> )   | 0.03 - 3000  | 0.2 - 3500         | 0.03 - 1200       | 0.4 - 6000  |
| To convert to Trolands, multiply luminance by the pupil area in mm <sup>2</sup> . |  |                    |                   |             |
| Input Type  | Custom 3 pin connector with positive, negative, and right leg drive signals.   |                    |                   |             |
| Noise   | < 0.1 $\mu$ V at the flicker frequency for flicker protocols   |                    |                   |             |
| CMRR  | > 100 dB at 50-60 Hz   |                    |                   |             |
| Frequency Range   | DC-coupled   |                    |                   |             |
| Flicker Frequency   | Approximately 28.3 Hz  |                    |                   |             |
| Data Resolution   | Approximately 71 nV / bit  |                    |                   |             |
| Input Range   | $\pm$ 0.6 V  |                    |                   |             |
| Sampling Rate   | Approximately 2 kHz  |                    |                   |             |
| Timing accuracy† (electronic eye)   | < $\pm$ 0.1 ms   |                    |                   |             |
| Timing precision† (human eye, 1 $\sigma$ )  | Typically < $\pm$ 1 ms   |                    |                   |             |
| Pupil measurements  | 1.3 mm – 9.0 mm, < 0.1 mm resolution, 28.3 Hz  |                    |                   |             |
| Safety  | Battery-powered. Complies with optical, electrical, and biocompatibility safety standards.   |                    |                   |             |
| Power source  | Li-ion battery allows testing of approximately 70 patients before recharging, depending on the protocol used   |                    |                   |             |
| Recharging time   | 4 hours – charger included (110-240 V~, 50-60 Hz, 0.5A)  |                    |                   |             |
| Size  | 2.8"W x 3.8"D x 9"H (7 cm x 10 cm x 23 cm)   |                    |                   |             |
| Weight  | 8.5 oz (240 g)   |                    |                   |             |
| Docking station   | Convenient storage location, charging stand, and USB connectivity to your computer and network   |                    |                   |             |
| Protocols   | Based on software options, choose from retinal illuminance (Td) and luminance (cd/m <sup>2</sup> ) versions of ISCEV standard, flicker, s-cone, photopic negative response, on-off, and diabetic retinopathy assessment protocols. |                    |                   |             |

† For Troland-based flicker protocols having a retinal illuminance energy  $\geq$  4 Td•s.

All specifications are subject to change.

The project described was supported by Award Number R44EY021121 from the National Eye Institute. The content is solely the responsibility of LKC and does not necessarily reflect the views of the National Eye Institute of the National Institutes of Health. The device is FDA Cleared and licensed for sale in 71 countries. Diabetic retinopathy assessment protocol is not currently available in the United States.

The device may be covered by one or more of the following US patents and their foreign counterparts: 7,540,613. Additional patents are pending. RETeval™ is a trademark of LKC Technologies, Inc. and is a registered trademark in the following countries: Canada, China, Japan, Mexico, Russian Federation, South Korea, Brazil, the E.U. and the United States of America.

©2016 LKC Technologies, Inc. 98-001 5/16

LKC Technologies, Inc.

2 Professional Drive, Suite 222 | Gaithersburg, MD 20879 USA

t: 800.638.7055 (USA only) | +1 301.840.1992 | f: +1 301.330.2237 | e: sales@lkc.com | www.lkc.com

