The Visagraph system consists of a measuring unit, measuring goggles and software. During reading printed text on paper, eye movements are recorded.

The analysis software runs on a standard computer. The system is connected to the computer with a USB connector that also provides power to the system. Power consumption is only 0.5 W, and the system can easily be run driven from a battery operated laptop computer. The power consumption of the Visagraph system is negligible compared to the computer's and will only reduce running time on battery marginally.

In a few minutes, Visagraph objectively measures the reading skill.

The automatic analysis calculates many values, including:

- Number of Fixations
- Number of Regressions
- Mean Fixation Duration
- Fixation Duration Distribution
- Reading speed in words per minute
- Grade Level Equivalent
- Regression/Fixation Ratio
- Anomalies (non-coordinated eye movements)
- Cross Correlation between right and left eye

A Visagraph measurement is fast and simple. The subject puts the measuring goggles on. If the subject has ordinary glasses or contact lenses, they can be worn as usual. Very strong glasses, such as +15, will still yield useable recordings. The interpupillary distance is adjusted, and the subject reads a text from the text booklet. There is no need for calibration or head fixation. The eye movements can be studied during recording on the computer screen. After the measurement, a number of comprehension questions is asked. A complete test is made in five minutes. The analysis is made in seconds, and the result can be printed.

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The measurement is presented both as numbers and with basic values translated to equivalent standard grades as a diagram.

The recorded eye movements can be shown superimposed on the text read. A black rectangle shows the fixation area in the text. This is very useful to explain the reading process to the tested person.
You can view the recording as a graph where the text is synchronized with the eye movements and details about the analysis are shown.

You can follow the development of some basic values for any number of measurements on the same subject in a diagram.

As support for assessments there are also a number of reading-problem related questions, that can be part of an analysis. The system comes with a set of questions prepared by OEP. These questions can easily be replaced with other questions by the user.

The measuring results, both eye positions from a single recording and calculated values from many recordings can be exported for further analysis in other programs.
The Visagraph system can be used to:

- Evaluate reading skill
- Monitor individual reading skill development.
- Check that reading skill goals have been achieved.
- Objectively measure reading parameters such as reading speed, regressions and fixation duration.
- Discover visual functional problems
- Increase reliability in diagnosis together with other evaluation tools

Currently, we can offer test texts for Afrikaans, American English, Chinese, Danish, Dutch, German, Italian, Mexican Spanish, Norwegian, Portuguese and Swedish. Arabic, French and Hebrew are in development. Korean is available in cooperation with a Korean company. It is easy to add own texts to the system. All texts used in the system is in Unicode, so almost any language can be handled.

Main features of the Visagraph system:

- Simple handling of the system
- No difficult adjustments
- No fixation of the head
- Normal reading situation, reading on plain paper with normal illumination
- Glasses or lenses can be used as usual inside measuring goggles
- Measuring goggles can be cleaned with ethanol or mild detergents
- Head movements are automatically compensated
- Automatic calculation of reading related values
- Eye movements can be presented as a diagram with calculation details and the read text synchronized
- Eye movements can be presented as moving marker on top of a read text with real or reduced speed
- System is powered through the USB-connection – handy when used as portable system
- Very low power consumption, only 0.5 W. The system will marginally affect running time for battery operated laptop computer
- Measurements (without automatic calculations) can be made in any situation
- All measurements can be printed as an adapted report
- Own texts and reading-related questions can be added by the user
- Infrared technique – no visible light
- Low light level – complies with IEC/EN 60825 (eye safety) even with worst possible component failure
- CE-marked. Complies with IEC/EN 60601 (medical approval)
- Tested by independent test facility - Intertek/ETL SEMKO

Technical details:

Measuring principle: Infrared differential reflectivity
Measuring speed: 60 Hz
Speed accuracy: ± 30 ppm
Measuring unit, size: 115 x 76 x 36 mm
Cable lengths:
- From measuring unit to computer: 1.75 meter
- From measuring goggles to measuring unit: 2.4 meter

The system as delivered consists of Measuring unit with USB cable, Measuring goggles with cable, manual, text booklet and software on CD.

Computer requirements:

- Connection: USB 1.1 or better.
- Macintosh computers with Intel processor and Windows software: Not guaranteed to work, but it is working in some cases. Worked on early iMac with OSX Leopard, Windows XP/7 and Boot Camp or Parallels Desktop version 6.0.
- Space on hard drive: 10 Mbyte for program + approx. 10 kbyte for each measurement.

Visagraph is a Swedish product that is both developed and produced in Sweden.

Visagraph is the successor to our Visagraph II system, that we developed and produced from 1995 to 2003. We also provide a similar system called ReadAlyzer.

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