The "visual aptitude" program of the Vision Monitor includes standard tests for visual acuity (ETDRS) with an automated scoring and recording of examination data.

In addition, it includes tests answering new needs for visual function testing in relationship with the quality of life of patients. The "classic" tests used for assessment of visual functions are performed with optimal conditions such as high luminance and high contrast. Therefore, they are not suitable to reflect visual problems that may appear in specific conditions of everyday life such as:

- Vision under low contrast
- Vision under low luminance
- Glare
- Color vision

**Test of visual acuity (Landolt and ETDRS)**

The Landolt ring acuity test is realized in accordance with the ISO8596 norm and is used for the delivery of certificates.

The ETDRS visual acuity test was developed by the National Institute of Health (FERRIS & al, 1982) as part of a study on early treatment of diabetic retinopathy. It has since become a standard for many clinical assessments. For example, in ARMD, the criteria for starting treatment by anti-angiogenic drugs requires an evaluation of visual acuity with the ETDRS test, possibly supplemented by a contrast sensitivity test. These tests include the original series of ETDRS tests as well as the revised 2000 series. They can be realized at a distance of 4 m, 2.5 m or 1 m (13 ft, 8 ft, 3 ft).

The tests have controlled luminance and contrast. Their scoring is computer assisted and can be archived in the patient’s data base and printed.

**Test of vision under low contrast and low luminance**

The following tests are designed to evaluate visual acuity under conditions of low contrast (10 percent) and low luminance (1 cd/m²).

The test series correspond to the ETDRS series. They can be scored with the computer’s assistance, be archived with the patient’s data base and printed.

**Additional information:** a program for the measurement of the contrast sensitivity curve is also proposed on the Vision Monitor. It uses gratings of contrast instead of optotypes (see corresponding leaflet).
Glare test

The light rays from the light sources are diffused by the different optical elements of the eye: the cornea, the lens and the retina. This diffused light creates a veil of light over the back of the eye which masks the retinal image of the optotypes. It may lead to strong visual difficulties in situations such as passing vehicles at night.

The clinical applications of this test are numerous: early detection of cataract, pre and post-operative screening of refractive surgery, evaluation of the ability to drive at night.

For the realization of the glare test, the stimulator is equipped with a lateral high luminance light source. Optotypes of calibrated low luminance are presented over a dark background. 3 different luminance levels are available: 1 cd/m² - 5 cd/m² - 100 cd/m².

The test is easy to perform and does provide a quantitative score. It consists in counting the number of letters which are correctly identified by the patient.


Color vision test

This test is a simplified version of color lantern tests.

It consists in asking the patient to identify the color of a test within a defined presentation time

- **Presentation time**: 1/25 s or 1 s
- **Examination distance**: 2.5 m
- **Test size**: 1 degree of visual angle

Aniseikonia

Aniseikonia corresponds to a difference of size between images seen by each eye. It generally results from the difference between both eyes optical parameters, for example after lens implants.

This test allows the equalization of the sizes of images perceived by the right and the left eye. It can be performed along the horizontal and vertical axis.

The difference in size, given in percentage permits the precise calculation of correcting prescriptions.