



Vision Monitor

Dark and light adaptation

Dark & Light adaptation

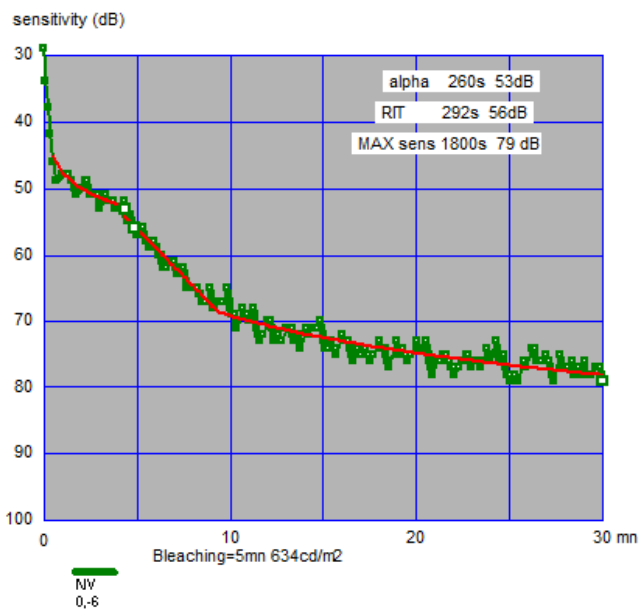


Introduction

The purpose of this program is to evaluate the adaptability to different lighting environments:

- measurement of the dark adaptation after light bleaching,
- measurement of the sensitivity threshold with ganzfeld stimulations after adaptation to darkness (scotopic FST test) or adaptation to light (photopic FST test),
- measurement of the ability to tolerate light (photoaversion test or PAT).

Dark adaptation after light bleaching



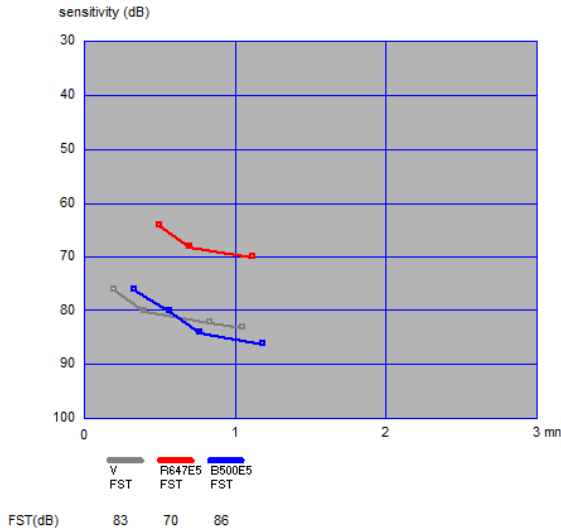
This examination allows the study of the dynamics of recovery of sensitivity to light after light bleaching. It begins with a 5-minute glare performed in ganzfeld (full-field) conditions. The patient is then placed in total darkness and presented with tests with the task of pressing the response bulb as soon as he perceives them. The test luminance is reduced when the patient responds; otherwise, it is increased. The first part of the curve corresponds to the recovery of the cones and is followed by that of the rods.

The result analysis determines the alpha point (breaking point between the recovery of the cones and that of the rods), the time necessary to have a start of recovery of the rods (rod intercept time or RIT) and the maximum level of sensitivity reached over the course of the exam.

On MonCvONE devices, this examination can be performed with local stimulation (size V Goldmann) or with full field (ganzfeld). Stimulations can be white or colored (red and blue for example).

On the other devices (MonPackONE, MonColor, MonCv3), the tests are performed only with ganzfeld stimulation. On the MonCv3 device, the patient must wear a mask during the dark phase.

Full field stimulus threshold (FST)



This examination consists of measuring the thresholds of light sensitivity after dark adaptation (scotopic FST) or light adaptation (photopic FST).

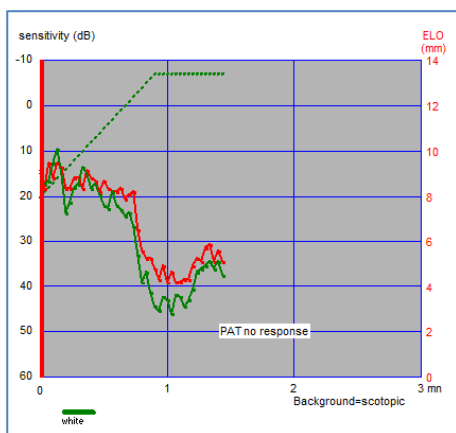
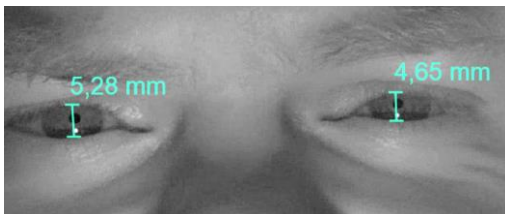
Thresholds are measured with an 8-4-2-1 staircase strategy, the patient having to press the response button when perceiving light stimulations. The tests can be white or with red and blue colors, to assess whether the response is mediated by cone or rod photoreceptors.

The use of full-field stimulation allows the examination of subjects with fixation difficulties (central scotoma, nystagmus, etc.). For a more detailed analysis of the retina, local tests can also be performed on the MonCvONE-CR perimeter using dark adapted chromatic perimetry.

The FST test is available on Metrovision's MonCvONE, MonPackONE and MonColor devices.

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Photoaversion threshold (PAT)



The luminance of the test increases gradually, in steps of 1 dB, the patient having to press the response button when he/she finds the level of light uncomfortable. The test is repeated several times for a pre-programmed duration and the final threshold is the average of the responses.

The video is recorded throughout the duration of the examination and the eye lid opening measured from this video. The final result (left) shows the change in luminance (dotted line) and the changes in eye lid opening for the right (red line) and left eye (green line). The pupil diameter can also be recorded in synchrony.

The PAT test is available on the MonCvONE and MonColor devices.



Technical specifications

	MonCV <i>One</i>	MonColor	MonPack <i>One</i>	MonCV3
Luminance of the bleaching phase	Programmable up to 600 cd/m ²	Programmable up to 3000 cd/m ²	300 cd/m ²	100 cd/m ²
Stimulus color	Programmable	Programmable	Programmable	White
Dark adaptation mask	Not needed	Not needed	Not needed	YES
Type of stimulus	Spot size V or ganzfeld	Ganzfeld	Ganzfeld	Ganzfeld
FST test	YES	YES	YES	NO
Photoaversion test	YES	YES	NO	NO

