

## Cyclotorsion detector device

### Description

The present invention relates to a ring-shaped device (1) with infrared lights (6) and LED lights (7) and a camera (5), easily connected to a power source for its operation and surgical equipment for the transmission of information captured by the camera (5), which serves to detect ocular cyclotorsion during the surgical operation itself for correction.

### How does it work?

Instrument that allows to evaluate the laxity and extension capacity of the eyelids providing a reproducible metric.

For this, the present invention engages the joint use of a measurement system with digital probe and an infrared distance measurement system or infrared ruler. Both systems are interconnected and collimated in the measurement area, which in this case is the lower portion of the eyeball coinciding with the lower eyelid.

The structure of the invention consists of a box in which the infrared ruler is collected, which may include anchoring elements to position it in front of the eyelid of the subject in order to ensure a precise measurement. Connected to it, by means of an extension cable, is the digital pen or probe.

The digital pen or probe has a spring with a certain elasticity constant which provides a direct measurement of the microns that the moving end of the sensor moves as a result of the pressure exerted on the eyelid. The displacement in microns translates directly into units of force exerted on the tissue.

The displacement of the eyelid downwards as a result of the force exerted by the digital probe exposes a lower area of the eyeball (visible bulbar conjunctiva) that will be proportional to the force exerted. The collimated infrared ruler accurately measures the distance of displacement of the eyelid in the direction of the force exerted by the probe.

### Advantages

It calibrates the lack of uniformity, being currently necessary to put a white Lambertian or quasi-Lambertian surface that has the size of the sample and this surface must be measured point by point to know the distribution of light.

### Where has it been developed?

In the Faculty of Optics and Optometry of the Complutense University of Madrid.

### And moreover

### Researcher in charge

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