

## 0. The ophthalmological refractometer for the aberrational intraocular lens transplantation and aberrational contact lens selection

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3. **Results.**

For the purpose of eye aberration correction with the special contact lens or intraocular lens it is necessary to be informed about eye refraction aberrational component. This information can be acquired by using of device based on modified Foucault knife method. For this purpose we propose to use the optical-electronic system which allows to detect and fix the pupil plane isodioter zones.

High speed is a significant feature of this device. It is possible to obtain ten or a hundred of isodioter zones pictures videorecording in eye pupil plane by using of the modern high-speed video camera.

The wave aberration function recovery and eye refraction map in pupillary coordinates is formed by the results of mathematical treatment of isodioter zones pictures videorecording in eye pupil plane. The information about refraction aberrational component space distribution in the pupil plane is used by ophthalmologists for the correction the front surface of the cornea or intraocular lens surfaces to correct eye optical system aberration and to improve the visual acuity.

The working model of ophthalmological aberrational refractometer with spatial resolution was create consequently. The design documentation of the model, mathematical and software was developed. The developed model makes it possible to detect the lower-order aberrational modes and to determine ametropy (defocusing), primary astigmatism and primary coma parameters. This aberrational modes, essentially, has an effect on visual acuity, so the information about its values is the most useful for ophthalmologists.

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