

ABSTRACT *Vovchok I.O.* The stand for research of diffractive lenses optical characteristics - Scientific work is manuscript copyright. This is for a Master's Degree in Specialty – 152 «Metrology and Information and Measurement Engineering». National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Kyiv, 2019.

Recently, diffraction optics has been increasingly used in optical and optoelectronic devices, both independently and as part of complex optoelectronic systems. It is used in almost every field of science and technology, from military development to household lenses. Particular attention should be paid to the use of diffractive lenses in ophthalmology, where they are used as substitutes for natural lenses, as well as contact lenses. Since the shape of the diffractive lens surface is rather complex and should be fairly accurate, the urgent issue of quality control of the 6

lens data arises. The stand offered in this work is based on the international standard ISO 11979, but has certain advantages over the standard in this standard. The first section is devoted to the study of the problem, the technological features of the manufacture and control of diffraction lenses, as well as the already known analogues of such installations. The second section discusses the theoretical methods of calculating the optical characteristics of diffractive lenses, describes in more detail the various diffractive lenses, in particular the intraocular ones used in ophthalmology, and presents a diagram of a laboratory unit developed in this work of the stand. The third section presents brief theoretical data used to obtain the results, and presents the images obtained by the stand with the corresponding processed study results. The fourth section is about creating a startup project. It examines the potential for entry into the market with this development and the possibility of attracting external investment in further development and improvement of the project. During the project development the following works were written: 1. Vovchok I.O.

Perspective diffraction technologies / I.O. Vovchok, O.I. Chikida. // XX

International scientific-practical conference of students, graduate students and young scientists «Efficiency of engineering decisions in instrument making».

Conference materials. – Kyiv, 2019. - P. 67-69. 2. Vovchok I.O. The current state of the diffraction lens market / O.I. Chikida, I.O. Vovchok. // XX International

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