A DOE to form a line-shaped directivity diagram

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Abstract

The article considers the design of diffractive optical elements intended to generate one-parameter directivity diagrams in the approximation of ray optics. The authors analyze the type of the field ray structure when generating a line-shaped directivity diagram and propose curvilinear coordinates for calculating the eikonal function. In curvilinear coordinates, a new, simpler expression for the eikonal function is derived. Examples of calculating the eikonal function for generating a directivity diagram shaped as a segment and a circular arc are provided.

<u>*Keywords*</u>: DOE, diffractive optical element, one-parameter directivity diagram, type of field ray structure, eikonal function.

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