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CONCENTRIC ANNULAR RING LENS DESIGNS FOR ASTIGMATIC PRESBYOPES

ABSTRACT OF THE DISCLOSURE

Concentric lens designs are disclosed for astigmatic presbyopes which comprise at least one surface which has a circular central portion and a plurality of concentric annular rings with at least three separate optical powers corresponding to a prescription for a patient and corresponding to 1) a basic distance spherical prescription Rx, 2) a near add spherical prescription Rx, and 3) a spherical prescription corresponding to the full, or preferably a fraction of the, cylindrical prescription Rx. An astigmatic presbyopic prescription contains an astigmatic correction, normally in the nature of a cylindrical prescription which specifies both the cylindrical optical power and the orientation of the cylindrical axis. The cylindrical prescription is taken into account in the design of the lens, but not with a cylindrical optical surface. Instead, the present invention recognizes that the brain can effectively discriminate between separate competing images by accepting an in-focus image and rejecting an out-of-focus image. Accordingly, a portion of the lens is provided with a spherical surface corresponding to the cylindrical prescription, or more preferably a fraction of the full cylindrical prescription, and the brain is relied upon to discriminate and accept an in-focus image to compensate for the patient's astigmatism.