

ABSTRACT

CONTACT LENS WITH OPTIMIZED PERFORMANCE AND METHOD OF DESIGN

An optimized contact lens design and method which leverages the strain energy of the system when placed on eye that improves centration, translation, and stabilization characteristics, or any combination thereof, in order to improve both comfort and vision. A contact lens design and methodology wherein the lens-eye resulting strain energy is optimized to achieve the desired function be it centration, translation, or stabilization. Since the lens strain energy is directly driven by the amount of lens deformation, it is possible to control the lens strain energy through the modulus of the material, design of the lens geometry, namely the radii or curvature, peripheral thickness profiles, edge or rim shapes. The surface pressure and/or lens strain energy can be optimized for a given population by averaging the ocular eye shape/surface. Alternatively the lens strain energy can be optimized for a single given eye (i.e., custom design).

Figure 3