

that the far-field focusing region 50C in FIG. 6, at 21.0 diopters, has a longer focal length than the near-field region 50B, at 24.5 diopters.

5. FIGS. 8A and 8B show lens regions which are geometric sectors of the circle defined by the periphery 90 of the lens. FIG. 8C shows regions which are parallel bands or stripes. FIG. 8D shows regions occupying the cells in a rectangular gridwork, or chessboard. FIGS. 8E and 8F show regions which are circular, but having centers displaced from the center 52A of the periphery 90. That is, the lens regions are not concentric. Further, FIG. 8E shows a lens which is symmetric about line 92.

FIG. 8G shows regions which are sectors, but not identical. For example, angle 91, subtended by one sector, is about 90 degrees; angles 88 are about 45 degrees; and the lower sector 94 subtends an angle of about 180 degrees. FIGS. 8H and 8I both show a lower sector subtending an angle of 180 degrees. However, in FIG. 8H, the upper section contains two concentric semicircles, while in FIG. 8I the upper section contains crescent-shaped regions. In FIG. 8J, the regions are crescent-shaped and symmetric about line 92. Central region 96 is in the shape of the common area of intersection of two circles, one having circumference 98, and the other having circumference 100. The shape of central region 96 can be called "cat's pupil," because of the resemblance of the shape to the pupil of that animal.

The individual regions shown in FIG. 8 may be spherical lenses or aspheric lenses corrected for aberrations, as discussed above.

In all lenses of FIGS. 8A through 8J, the constricted pupil 55 admits light through a far-field focusing region, such as the hatched region in FIG. 8D having a power of 21.0 D. Similarly, the pupil in FIG. 7 which is constricted to a diameter 44, admits light through far-field focusing region 50C.

6. If the lens should become de-centered upon the eye, the light distribution upon the retina remains substantially unaffected, so long as the amount of de-centering is not too large.

7. It was stated above that the innermost region 50C in FIG. 6 has a diameter of 1.00 mm, the middle region 50B has a diameter of 2.36 mm, and the outer region 50A has a diameter of 6.00 mm. These dimensions fall within the ranges of 0.75-1.50, 2.00-3.00, and 5.00-10.00 mm for the innermost, middle, and outer regions, respectively, and diameters falling within these ranges can be used in the invention.

8. While the IOL of FIGS. 2 and 7 has been shown as positioned in the posterior chamber of the eye, the lens body of the present invention can be implanted in either

the posterior or the anterior chamber with techniques commonly known and used in the field today.

Further, although the invention is illustrated in the drawings as being implanted without accompanying haptic members, the lens body, when in use in the eye, is typically combined with a pair, or a greater number, of haptic members for positioning and centering of the lens in the eye. The haptic members can be of any of the sizes and shapes commonly known and used today, such as the Shearing J-loops, the Simcoe C-loops, the Sinsky modified J-loops, etc. For illustrative purposes, an intraocular lens utilizing a lens body 50 of the present invention with a pair of generally J-type loop haptic members 105 is shown in FIG. 14. The haptic members 105 can be affixed to the lens body in any of the methods in common use today, or the lens and haptics can be formed as an integral, one-piece structure.

Numerous substitutions and modifications can be undertaken without departing from the true spirit and scope of the invention as defined in the following claims.

What is desired to be secured by letters patent is the invention as defined in the following claims;

1. An intraocular lens comprising:

- a) a first region, of long focal length, located near the center of the lens, and having a maximum diameter less than the average minimum diameter of a contracted pupil;
- b) a second region, of short focal length, which is substantially concentric about the first region, and having an inner diameter less than the average minimum diameter of a contracted pupil;
- c) a third region, of substantially the same focal length as the first region, and which is substantially concentric about the second region, and having an inner diameter not less than the average minimum diameter of a contracted pupil;
- d) the product of a first predetermined light intensity and the total area of said first region of long focal length located near the center of the lens being substantially equal to the product of a second predetermined light intensity and the total area of said second region of short focal length;
- e) said first predetermined light intensity being greater than said second predetermined light intensity and being about 100 lux; and
- f) said second predetermined light intensity being about 6 lux.

2. A lens according to claim 1 in which the diameter of the first region is in the range of 0.75 to 1.50 millimeters, the outer diameter of the second region is in the range of 2.0 to 3.0 millimeters and the outer diameter of the third region is in the range of 5.00-10.00 millimeters.

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