WHAT IS CLAIMED IS:

1. A lens configured for implantation into an eye of a human, said lens comprising:

an optic comprising transparent material, said optic having an anterior surface and a posterior surface, said anterior surface being convex and said posterior surface being concave such that said optic is meniscus shaped, each of said convex anterior surface and said concave posterior surface having a surface vertex, said optic having an optical axis through said surface vertices and a thickness along said optical axis that is between about 100-700 micrometers,

haptic portions disposed about the optic to affix the optic in the eye when implanted therein,

wherein said anterior and posterior surfaces comprise aspheric surfaces, and

wherein the anterior and posterior surfaces are shaped to provide a radial power profile characterized by $\Phi(r) = a + br^2 + cr^4 + dr^6 + er^8$ where r is the radial distance from the optical axis and a, b, c, d, and e are non-zero coefficients.

2. The lens of Claim 1, wherein said anterior surface is rotationally symmetric.

3. The lens of Claim 1, wherein said anterior surface has a shape that includes a conic or biconic term.

4. The lens of Claim 3, wherein said anterior surface has a shape that includes a conic or biconic term and aspheric higher order perturbation terms.

5. The lens of Claim 2, wherein said posterior surface has a shape that includes a conic or biconic term.

6. The lens of Claim 5, wherein said conic or biconic term has a conic constant having a magnitude greater than zero.

7. The lens of Claim 6, wherein said conic or biconic term has a conic constant having a magnitude of at least one.

8. The lens of Claim 7, wherein said conic or biconic term has a conic constant having a magnitude of at least ten.

9. The lens of any of Claims 2-4, wherein said posterior surface is rotationally non-symmetric and has different curvature along different directions through said optical axis of said optic.

10. The lens of Claim 9, wherein said posterior surface has different curvature along orthogonal directions through said optical axis of said optic.

11. The lens of any of Claims 2-3, wherein said posterior surface is rotationally non-symmetric and has a shape that includes a biconic term.

12. The lens of Claim 11, wherein said biconic term has a conic constant having a magnitude greater than zero.

13. The lens of Claim 12, wherein said biconic term has a conic constant having a magnitude of at least one.

14. The lens of Claim 13, wherein said biconic term has a conic constant having a magnitude of at least ten.

15. A lens configured for implantation into an eye of a human, said lens comprising:

an optic comprising transparent material, said optic having an anterior surface and a posterior surface, said anterior surface being convex and said posterior surface being concave such that said optic is meniscus shaped, each of said convex anterior surface and said concave posterior surface having a surface vertex, said optic having an optical axis through said surface vertices,

at least one haptic disposed with respect to the optic to affix the optic in the eye when implanted therein,

wherein said anterior and posterior surfaces comprise aspheric surfaces and said anterior surface has an aspheric shape that comprises a conic or biconic offset by perturbations comprising an aspheric higher order function of radial distance from the optical axis, and wherein the anterior and posterior surfaces are shaped so as not to produce discrete spaced apart foci where light is focused along said optical axis.

16. The lens of Claim 15, wherein said aspheric higher order function includes a second order term, a_2r^2, where a_2 is a coefficient and r is the radial distance from the optical axis.

17. The lens of Claim 15 or 16, wherein said aspheric higher order function includes a fourth order term, a_4r^4, where a_4 is a coefficient and r is the radial distance from the optical axis.

18. The lens of any of Claims 15-17, wherein said aspheric higher order function includes a sixth order term, a_6r^6 where a_6 is a coefficient and r is the radial distance from the optical axis.

19. The lens of any of Claims 15-18, wherein said aspheric higher order function includes an eighth order term, a_8r^8 where a_8 is a coefficient and r is the radial distance from the optical axis.

20. The lens of Claim 15, wherein said aspheric higher order function includes at least one even order term, $a_{2n}r^{2n}$, where n is an integer and a_{2n} is a coefficient and r is the radial distance from the optical axis.

21. The lens of any of Claims 15-20, comprising a plurality of haptics.

22. The lens of any of Claims 15-21, wherein said optic has a thickness along said optical axis that is between about 100-700 microns.

23. The lens of any of Claims 15-22, wherein said anterior surface has an aspheric shape that comprises a biconic offset by said perturbations.

24. The lens of Claim 1, wherein the haptic portions are configured to stabilize the optic in the eye such that the optical axis of the optic is disposed along a central optical axis of the eye.

25. The lens of Claim 15, wherein the at least one haptic is configured to stabilize the optic in the eye such that the optical axis of the optic is disposed along a central optical axis of the eye.

26. The lens of Claim 15,

wherein the anterior and posterior surfaces are shaped to provide a radial power profile characterized by $\Phi(r) = a + br^2 + cr^4 + dr^6 + er^8$ where r is the radial distance from the optical axis and a, b, c, d, and e are non-zero coefficients.