

Claims

What is claimed is:

1. An ophthalmic lens comprising:
a first surface;
a second surface disposed opposite the first surface, wherein the second surface is
configured to abut at least a portion of an eye of a wearer; and
a lens stabilization zone disposed adjacent the first surface, wherein at least a contour of
the lens stabilization zone is configured to minimize a recovery time for the
ophthalmic lens to orient to a resting position from a misaligned position.
2. The ophthalmic lens of claim 1, wherein the ophthalmic lens has a generally round shape.
3. The ophthalmic lens of claim 1, wherein the ophthalmic lens has a non-round shape.
4. The ophthalmic lens of claim 1, further comprising a second lens stabilization zone
disposed adjacent the first surface.
5. The ophthalmic lens of claim 4, wherein at least a contour of the second lens stabilization
zone is configured to minimize a recovery time for the ophthalmic lens to orient to a
resting position from a misaligned position due to interaction with at least one eyelid of
the wearer.
6. The ophthalmic lens of claim 4, wherein the lens stabilization zones are symmetrical with
respect to the sagittal plane.
7. The ophthalmic lens of claim 4, wherein the lens stabilization zones are symmetrical with
respect to the tangential plane.
8. The ophthalmic lens of claim 4, wherein the lens stabilization zones are symmetrical with
respect to the sagittal plane and the tangential plane.

9. The ophthalmic lens of claim 4, wherein the lens stabilization zones are not symmetrical with respect to the sagittal plane.
10. The ophthalmic lens of claim 4, wherein the lens stabilization zones are not symmetrical with respect to the tangential plane.
11. The ophthalmic lens of claim 4, wherein the lens stabilization zones are not symmetrical with respect to the sagittal plane and the tangential plane.
12. The ophthalmic lens of claim 1, wherein the lens stabilization zone is disposed at least partially within an active region of the lens based on an expected interaction with the at least one eyelid of the wearer.
13. The ophthalmic lens of claim 12, wherein the expected interaction with the at least one eyelid of the wearer is based on an individual eye shape of a target wearer.
14. The ophthalmic lens of claim 12, wherein the expected interaction with the at least one eyelid of the wearer is based on a plurality of sample eyes.
15. The ophthalmic lens of claim 12, wherein the expected interaction with the at least one eyelid of the wearer is based on one or more eyelid profiles.
16. The ophthalmic lens of claim 15, wherein the one or more eyelid profiles comprise a Cartesian coordinate system by a second order polynomial of the form: $a_0 + a_1 \cdot x + a_2 \cdot x^2$, where a_0 represents the superior/inferior palpebral aperture, the distance between the pupil center to the edge of the upper/lower eyelid in primary gaze, a_1 is the slope of the eyelid at the location of the superior/inferior palpebral aperture and a_2 is the curvature at that same location, and x is the distance along the horizontal direction of the Cartesian coordinate system with its origin at the center of the pupil.
17. The ophthalmic lens of claim 12, wherein the expected interaction with the at least one eyelid of the wearer is based on at least one eyelid in a given gaze direction.

18. The ophthalmic lens of claim 1, wherein the recovery time is below 2 minutes for a misalignment of 45 degrees.
19. The ophthalmic lens of claim 1, wherein the misaligned position is greater than 5 degrees measured angularly from a horizontal axis.
20. The ophthalmic lens of claim 1, wherein the misaligned position is greater than 10 degrees measured angularly from a horizontal axis.
21. A method of making the ophthalmic lens of claim 1.
22. An ophthalmic lens comprising:
 - a first surface;
 - a second surface disposed opposite the first surface, wherein the second surface is configured to abut at least a portion of an eye of a wearer; and
 - an active region disposed adjacent the first surface, wherein at least a contour of the active region is configured based on a distribution of terrain slope of a target one or more eyes.
23. The ophthalmic lens of claim 22, wherein the contour comprises a cumulative terrain slope.
24. The ophthalmic lens of claim 22, wherein the contour is configured for interactions with only upper eyelids or only lower eyelids.
25. The ophthalmic lens of claim 22, wherein the ophthalmic lens has a generally round shape.
26. The ophthalmic lens of claim 22, wherein the ophthalmic lens has a non-round shape.

27. The ophthalmic lens of claim 22, further comprising a second active region disposed adjacent the first surface.
28. The ophthalmic lens of claim 27, wherein at least a contour of the second active region is configured based on a distribution of terrain slope of a target one or more eyes.
29. The ophthalmic lens of claim 27, wherein the active regions are symmetrical with respect to the sagittal plane.
30. The ophthalmic lens of claim 27, wherein the active regions are symmetrical with respect to the tangential plane.
31. The ophthalmic lens of claim 27, wherein the active regions are symmetrical with respect to the sagittal plane and the tangential plane.
32. The ophthalmic lens of claim 27, wherein the active regions are not symmetrical with respect to the sagittal plane.
33. The ophthalmic lens of claim 27, wherein the active regions are not symmetrical with respect to the tangential plane.
34. The ophthalmic lens of claim 27, wherein the active regions are not symmetrical with respect to the sagittal plane and the tangential plane.
35. The ophthalmic lens of claim 22, wherein the active region is configured based on an expected interaction with the at least one eyelid of the wearer.
36. The ophthalmic lens of claim 35, wherein the expected interaction with the at least one eyelid of the wearer is based on an individual eye shape of a target wearer.
37. The ophthalmic lens of claim 35, wherein the expected interaction with the at least one eyelid of the wearer is based on a plurality of sample eyes.

38. The ophthalmic lens of claim 35, wherein the expected interaction with the at least one eyelid of the wearer is based on one or more eyelid profiles.
39. The ophthalmic lens of claim 38, wherein the one or more eyelid profiles comprise a Cartesian coordinate system by a second order polynomial of the form: $a_0 + a_1 \cdot x + a_2 \cdot x^2$, where a_0 represents the superior/inferior palpebral aperture, the distance between the pupil center to the edge of the upper/lower eyelid in primary gaze, a_1 is the slope of the eyelid at the location of the superior/inferior palpebral aperture and a_2 is the curvature at that same location, and x is the distance along the horizontal direction of the Cartesian coordinate system with its origin at the center of the pupil.
40. The ophthalmic lens of claim 35, wherein the expected interaction with the at least one eyelid of the wearer is based on at least one eyelid in a given gaze direction.
41. The ophthalmic lens of claim 22, wherein at least a contour of the active region is configured to minimize a recovery time for the ophthalmic lens to orient to a resting position from a misaligned position.
42. The ophthalmic lens of claim 41, wherein the recovery time is below 2 minutes for a misalignment of 45 degrees.
43. The ophthalmic lens of claim 41, wherein the misaligned position is greater than 5 degrees measured angularly from a horizontal axis.
44. The ophthalmic lens of claim 41, wherein the misaligned position is greater than 10 degrees measured angularly from a horizontal axis.
45. A method of making the ophthalmic lens of claim 22.