Claims

1. An ophthalmic lens, the lens including an optic zone comprising:

a central region having a curvature that is centred on an optical axis, the central region providing a distance corrective radial curvature power, curvature power being determined by a local curvature of the lens, and having a radial slope power profile that increases with increasing radial distance from the optical axis, slope power at a location being determined by a slope of a wavefront after the wavefront has passed through the lens divided by the radial distance of the location from the optical axis, wherein the gradient of the radial slope power profile across the central region increases with increasing radial distance from the optical axis, following a first curve; and

a first annular region circumscribing the central region, the first annular region providing a radial curvature add power having a greater radial curvature add power than the central region,

wherein the first annular region has a radial slope power profile that increases with increasing radial distance from the optical axis, wherein the gradient of the radial slope power profile across the first annular region increases with increasing radial distance from the optical axis, following a second curve, and

wherein the radial slope power increases across the radial width of the first annular region from a first value that lies below the first curve, to a second value that is greater than the first curve.

2. An ophthalmic lens according to claim 1, further comprising a second annular region circumscribing the first annular region, wherein the second annular region provides a distance corrective radial curvature power and has a radial slope power profile that increases with increasing radial distance from the optical axis, wherein the gradient of the radial slope power profile across the second annular region increases with increasing radial distance from the optical axis, following the first curve.

3. An ophthalmic lens according to claim 1 or claim 2, wherein there is a sharp decrease in radial slope power at a boundary between the central region and the first annular region.

4. An ophthalmic lens according to any of claims 1-3, wherein at a point halfway across the radial width of the first annular region, the radial slope power lies on the first curve.

5. An ophthalmic lens according to claim 2, further comprising a third annular region circumscribing the second annular region, wherein the third annular region provides a radial curvature add power.

6. An ophthalmic lens according to claim 5, wherein the third annular region has a radial slope power profile that increases with increasing radial distance from the optical axis, wherein the gradient of the radial slope power profile across the first annular region increases with increasing radial distance from the optical axis following a third curve.

7. An ophthalmic lens according to any preceding claim, wherein the central region provides an average distance corrective radial curvature power of between +0.5 D and -15.0 D.

8. An ophthalmic lens according to any preceding claim, wherein the first annular region provides a radial curvature add power that is at least +10.0 D more positive than the average distance corrective radial curvature power.

9. An ophthalmic lens according to any preceding claim, wherein the central region has a diameter of between about 2.0 and 4.0 mm.

10. An ophthalmic lens according to any preceding claim wherein the lens is a contact lens.

11. A contact lens according to claim 10, wherein the lens comprises a hydrogel material, or a silicone hydrogel material, or a combination thereof.

12. A method of manufacturing an ophthalmic lens, the method comprising:

providing a spherical aberration power profile, the spherical aberration power profile being the variation in radial slope power for an eye, as a

function of radial distance from an optical axis of the eye, slope power at a location being determined by a slope of a wavefront after the wavefront has passed through an optical surface divided by the radial distance of the location from the optical axis;

providing a target radial slope power profile for a lens wearer, the target radial slope power profile being the target variation in radial slope power as a function of radial distance from an optical axis of the eye of the lens wearer, wherein the target radial slope power profile includes a central region having a distance corrective radial curvature power, curvature power being determined by a local curvature of an optical surface, and a first annular region that provides a radial curvature add power having a greater radial curvature add power than the central region;

subtracting the spherical aberration power profile from at least the central region of the target radial slope power profile, thereby providing a corrected radial slope power profile for an ophthalmic lens, wherein the central region has a radial slope power profile that increases with increasing radial distance from the optical axis, wherein the gradient of the radial slope power profile across the central region increases with increasing radial distance from the optical axis, following a first curve; wherein the first annular region has a radial slope power profile that increases with increasing radial distance from the optical axis, wherein the gradient of the radial slope power profile across the first annular region increases with increasing radial distance from the optical axis, following a second curve, and wherein the radial slope power increases across the radial width of the first annular region from a first value that lies below the first curve, to a second value that is greater than the first curve; and

manufacturing an ophthalmic lens having the corrected radial slope power profile.

13. A method according to claim 12, comprising:

providing a first spherical aberration power profile that plots variation in radial slope power for a lens wearer's eye when the eye is in a first non-accommodating state;

providing a second spherical aberration power profile that plots variation in radial slope power for a lens wearer's eye when the eye is in a second, accommodating state;

subtracting the first spherical aberration power profile from the central region of the target radial slope power profile; and

subtracting the second spherical aberration power profile from the first annular zone of the target radial slope power profile.