Claims

1. An ophthalmic lens (1) comprising a lens surface (2) with a lens profile being representable by a combination of a standard aspheric profile and an even-order aspheric profile, wherein the aspheric profiles are combined such that, in a region immediately surrounding the vertex (3) of the lens surface, the lens profile converges to a sum of the standard aspheric profile and the even-order aspheric profile with decreasing radial distance to the vertex (3) and, in an outer region surrounding the vertex (3), the lens profile converges to the standard aspheric profile with increasing radial distance to the vertex (3).

2. The ophthalmic lens (1) as defined by claim 1, wherein the combination of the standard aspheric profile and the even-order aspheric profile is representable by a smooth function of the radial position.

3. The ophthalmic lens (1) as defined by any of claims 1 and 2, wherein the combination of the standard aspheric profile and the even-order aspheric profile is representable by a function of the radial position, which has a first-order derivative of zero at the vertex (3) of the lens surface.

4. The ophthalmic lens (1) as defined by any of the preceding claims, wherein the combination of the standard aspheric profile and the even-order aspheric profile is representable by a function of the radial position, which changes the sign of the second-order derivative with increasing radial position.

5. The ophthalmic lens (1) as defined by any of the preceding claims, wherein the sag function of the standard aspheric profile is defined by

$$S_1(r) = \frac{cr^2}{1 + \sqrt{1 - (1 + k)c^2r^2}},$$

wherein r denotes the radial distance to the vertex (3) of the lens surface (2), c denotes the curvature at the vertex (3) of the lens surface (2) and k denotes the conic constant.

6. The ophthalmic lens (1) as defined by claim 5, wherein the curvature c at the vertex of the lens surface (2) is a) larger than or equal to 0.005 mm^{-1} and b) smaller than or equal to 0.25 mm^{-1}.

7. The ophthalmic lens (1) as defined by any of claims 5 and 6, wherein the conic constant k is a) larger than or equal to -800 and b) smaller than or equal to 5.

8. The ophthalmic lens (1) as defined by any of the preceding claims, wherein the sag function of the even-order aspheric profile is defined by

$$S_2(r) = \sum_{n=1}^{8} A_{2n} r^{2n} ,$$

wherein r denotes the radial distance to the vertex (3) of the ophthalmic lens surface (2) and the A_{2n} are constants.

9. The ophthalmic lens (1) as defined by any of the preceding claims, wherein the combination of the standard aspheric profile and the even-order aspheric profile is definable by a combination function which depends on the radial distance to the vertex (3) such that the contribution of the standard aspheric profile and the contribution of the even-order aspheric profile to the lens profile at a certain radial distance to the vertex depends on the radial distance.

10. The ophthalmic lens (1) as defined by claim 9, wherein a sag function of the lens profile is defined by

$$S(r) = M(r)S_1(r) + \big(1 - M(r)\big)\big(S_1(r) + S_2(r)\big) ,$$

wherein r denotes the radial distance to the vertex (3) of the lens surface (2), $S_1(r)$ denotes a sag function of the standard aspheric profile, $S_2(r)$ denotes a sag function of the even-order aspheric profile and $M(r)$ denotes the combination function.

11. The ophthalmic lens (1) as defined by any of claims 9 and 10, wherein the combination function is a smooth function.

12. The ophthalmic lens (1) as defined by claim 11, wherein the combination function is defined by

$$M(r) = \frac{1}{2}\big(1 + \tanh\big(A(r - \rho)\big)\big) ,$$

wherein A and ρ are constants.

13. The ophthalmic lens (1) as defined by claim 12, wherein the constant A is larger than $2.0\ \mathrm{mm}^{-1}$ and smaller than $10.0\ \mathrm{mm}^{-1}$, and the constant ρ is larger than $0.3\ \mathrm{mm}$ and smaller than $2.5\ \mathrm{mm}$.

14. The ophthalmic lens (1) as defined by any of the preceding claims, wherein the ophthalmic lens (1) is an intraocular lens.

15. A manufacturing method of manufacturing an ophthalmic lens (1) as defined by any of claims 1 to 14, wherein the manufacturing method comprises forming (102) a lens profile of a lens surface (2) of the ophthalmic lens (1) such that it is representable by a combination of a standard aspheric profile and an even-order aspheric profile, wherein the aspheric profiles are combined such that, in a region immediately surrounding the vertex (3) of the lens surface (2), the lens profile converges to a sum of the standard aspheric profile and the even-order aspheric profile with decreasing radial distance to the vertex (3) and, in an outer region surrounding the vertex (3), the lens profile converges to the standard aspheric profile with increasing radial distance to the vertex (3).