

Claims

1. An intraocular lens (1) having a lens (3) comprising:
 - a main lens part (4) having a main lens surface (4') and a main optical axis (5) defining radial, tangential and axial directions; and
 - a recessed part (6, 7) having a recess surface (6', 7') and extending between said main optical axis (5) and a circumference (2) of said lens (3), said recessed part (6, 7) comprising a secondary lens part (6) with a secondary lens surface (6') having a positive relative optical power with respect to an optical power of said main lens surface (4'),

said main lens surface extending in an outward radial direction towards a main lens outer circumference section (4a) remote from said main optical axis (5),

said main lens outer circumference section (4a) and said main lens surface (4') defining:

 - an imaginary main lens outer circumference section (4a') that would have at least partially provided a main lens outer circumference together with said main lens outer circumference section (4a) in case said recessed part (6, 7) would have been absent; and
 - an imaginary main lens surface section (4'') that would have been part of said main lens surface (4') in case said recessed part (6, 7) would have been absent, said recess surface (6', 7') being recessed with respect to said imaginary main lens surface section (4''),

wherein said recessed part (6, 7) extends in an outward radial direction to an outer recess boundary (6a) remote from said main optical axis (5), said outer recess boundary (6a) extending along or beyond said imaginary main lens outer circumference section (4a') as seen in an outward radial direction.

2. The intraocular lens according to claim 1, wherein said outer recess boundary (6a) is at a distance from said main optical axis (5) which is equal to or larger than a distance of said imaginary main lens outer circumference section from said main optical axis (5) in a same radial direction.

3. The intraocular lens according to claim 1 or 2, wherein said imaginary main lens outer circumference section-(4a²) and said imaginary main lens surface-(4²²) are essentially defined by mirror symmetry with respect to a mirror plane comprising said main optical axis-(5), said imaginary main lens outer circumference section-(4a²) and
 5 said imaginary main lens surface-(4²²) on one side of said mirror plane essentially coinciding with mirror images of part of said main lens outer circumference section-(4a) and part of said main lens surface-(4¹), respectively, on the other side of said mirror plane; and/or said imaginary main lens outer circumference section-(4a²) and said imaginary main lens surface-(4²²) are essentially defined by line symmetry
 10 with respect to said main optical axis-(5), said imaginary main lens outer circumference section-(4a²) and said imaginary main lens surface-(4²²) on one side of said main optical axis-(5) essentially coinciding with mirror images of part of said main lens outer circumference section-(4a) and part of said main lens surface-(4¹), respectively, on the other side of said main optical axis-(5).

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4. The intraocular lens according to claim 1, 2 or 3, wherein said imaginary main lens outer circumference section-(4a²) is at least essentially in a first plane-(A) perpendicular to said main optical axis-(5), and said outer recess boundary-(6a) is at least essentially in a second plane-(B) perpendicular to said main optical axis-(5), said
 20 first plane-(A) at least essentially coinciding with said second plane-(B).

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5. The intraocular lens according to claim 1, 2, 3 or 4, wherein said outer recess boundary-(6a) at least essentially coincides with said imaginary main lens outer circumference section-(4a²).

6. The intraocular lens according to claim 1, 2 or 3, wherein said imaginary main lens outer circumference section-(4a²) is at least essentially in a first plane-(A) perpendicular to said main optical axis-(5), and said outer recess boundary-(6a) is at least essentially in a second plane-(B) perpendicular to said main optical axis-(5), said
 30 first plane-(A) being at a distance-(dAB) from said second plane-(B) as seen in an axial direction outward of said lens-(3).

7. The intraocular lens according to claim 1, 2, 3 or 6, wherein said imaginary main lens outer circumference section-~~(4a')~~ is at a distance from said outer recess boundary-~~(6a)~~ as seen in an axial direction outward of said lens-~~(3)~~.
- 5 8. The intraocular lens according to any one of claims 1 to 7, wherein said recess surface-~~(6')~~ essentially only comprises said secondary lens surface-~~(6')~~ extending to said outer recess boundary-~~(6a)~~.
9. The intraocular lens according to any one of claims 1 to 7, wherein said recess
10 surface-~~(6', 7')~~ essentially only comprises an essentially concave surface section-~~(7')~~ extending along said outer recess boundary-~~(6a)~~, and said secondary lens surface-~~(6')~~ extending to said essentially concave surface section-~~(7')~~.
10. The intraocular lens according to the preceding claim, wherein said concave
15 surface section-~~(7')~~ extends between about 0.2 and 1.2 mm in the radial direction.
11. The intraocular lens according to any one of the preceding claims, wherein said recessed part-~~(6, 7)~~ in tangential directions is bounded by meridian boundaries-~~(6e)~~ extending along meridians of said main lens surface-~~(4')~~ passing through said main
20 optical axis-~~(5)~~.
12. The intraocular lens according to the preceding claim, wherein said recessed part-~~(6, 7)~~ extends between 160 and 190 degrees in said tangential directions between said meridian boundaries-~~(6e)~~.
- 25 13. The intraocular lens according to any one of the preceding claims, wherein said main lens outer circumference at least essentially coincides with said circumference-~~(2)~~ of said lens-~~(3)~~.
- 30 14. The intraocular lens according to any one of the preceding claims, wherein said secondary lens surface-~~(6')~~ comprises at least two secondary lens surface sections neighbouring in a radial direction, an optical power of one secondary lens surface section being larger in an outward radial direction with respect to a neighbouring

secondary lens surface section.

15. The intraocular lens according to any one of the preceding claims, wherein said lens-(3) further comprises a central lens part-(8) around said main optical axis-(5), said
5 central lens part-(8) fitting within a circle around said main optical axis-(5) and having a diameter between 0.1 and 2.0 mm.

16. The intraocular lens according to the preceding claim, wherein a surface of said central part-(8) is adjacent to said main lens surface-(4'), defining a main lens inner
10 circumference section-(4b) of said main lens surface-(4'), and adjacent to said recess surface-(6'), defining an inner recess boundary-(6b) of said recess surface-(6', 7').

17. The intraocular lens according to any one of the preceding claims, wherein said main lens part-(4) is configured for optimizing distance vision of a person provided
15 with said intraocular lens-(1).

18. The intraocular lens according to any one of the preceding claims, wherein said secondary lens part-(6) is configured for optimizing near and/or intermediate vision of a person provided with said intraocular lens-(1).

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19. The intraocular lens according to any one of the preceding claims, wherein said main lens part-(4) has an optical power between about -20 and +35 dioptr.

20. The intraocular lens according to any one of the preceding claims, wherein said
25 secondary lens part-(6) has a relative optical power between +0.5 and 10.0 with respect to said main lens part-(4).

21. The intraocular lens according to any one of the preceding claims, wherein said main lens outer circumference-(4a, 4a') fits within a circle around said main optical
30 axis-(5) and having a diameter between 5 and 7 mm.

22. An intraocular lens comprising a posterior side for facing towards the posterior chamber of the human eye, and an anterior side for facing away from the posterior