CLAIMS

1. An eyeglass lens able to suppress progression of near-sightedness, the eyeglass lens comprising:

a lens substrate having a plurality of substrate protruding portions that protrude from a substrate base portion on a surface of the lens substrate;

a coating film provided to cover the plurality of substrate protruding portions, the coating film comprising a coating film base portion covering the substrate base portion and coating film convex portions covering the substrate protruding portions;

a plurality of convex portions and concave portions provided on an outermost surface of the eyeglass lens, wherein

more than 50% of the substrate protruding portions are in a height range of 0.5 μm to 2 μm,

a thickness of the coating film base portion range from 2.0 μm to 5.0 μm,

a smallest value of a thickness of a coating film portion at a base of the substrate protruding portion is 0.4 to 1.20 times thicker than the thickness of the coating film base portion,

a refractive power of the substrate protruding portion is in a range of 2.50 D to 6.50 D,

a defocus power of the coating film convex portion is in a range of 2.50 D to 6.50 D,

a value in the range of 0.10 to 0.90 at a cross-section of the lens that includes a center of the coating film convex portions, wherein the value is obtained by dividing, a smallest value of a difference between a largest value of a thickness of the coating film and a thickness at a vertex of the coating film convex portion, by a largest value of the difference between the largest value of a thickness of the coating film and the thickness at the vertex of the coating film convex portion,

a base portion, which is a portion of the outermost surface of the eyeglass lens other than the coating film convex portions, converges light rays entering from an object-side surface of the lens substrate and emitted from an eyeball-side surface of the lens substrate onto a convergence position A,

the coating film convex portions converges the light rays entering into the lens and emitted from the eyeball-side surface onto convergence position B, which is closer to an object than convergence position A, thereby providing a myopia progression

suppression effect,

a stray-light ratio of the lens, which indicates a ratio of stray-light rays which do not pass through a vicinity of the convergence position A and a vicinity of the convergence position B, is 15% or less,

the stray-light ratio is obtained by measuring a smallest unit which is a circular region entirely including another of the coating-film-convex portions located at a shortest distance from a referential center that is one of the coating-film-convex portions,

a diameter of the circular region defined as the smallest unit is 4.0 mm,

the stray-light ratio is obtained by steps of:

measuring a surface shape of the lens;

generating curved-surface data of a convex-surface shape of the lens based on the measured surface shape;

setting a model of the lens based on the generated curved-surface data;

specifying a position, at which the rays converge most when the rays have passed through the lens, is the vicinity of the convergence position A as well as the vicinity of the convergence position B by a ray-tracing process,

the vicinity of the convergence position A is in a radius range of 2.5 to 20 μm from the convergence position A, and

the vicinity of the convergence position B is in a radius range of 2.5 to 20 μm from the convergence position B.

2. A method of manufacturing an eyeglass lens able to suppress progression of near-sightedness, the method comprising steps of:

providing a lens substrate having a plurality of substrate protruding portions that protrude from a substrate base portion on a surface of the lens substrate;

forming a coating film to cover the plurality of substrate protruding portions, the coating film comprising a coating film base portion covering the substrate base portion and coating film convex portions covering the substrate protruding portions;

forming a plurality of convex portions and concave portions on an outermost surface of the eyeglass lens, wherein

more than 50% of the substrate protruding portions are in a height range of 0.5 μm to 2 μm,

a thickness of the coating film base portion range from 2.0 μm to 5.0 μm,

a smallest value of a thickness of a coating film portion at a base of the substrate protruding portion is 0.4 to 1.20 times thicker than the thickness of the coating film base portion,

a refractive power of the substrate protruding portion is in a range of 2.50 D to 6.50 D,

a defocus power of the coating film convex portion is in a range of 2.50 D to 6.50 D,

a value in the range of 0.10 to 0.90 at a cross-section of the lens that includes a center of the coating film convex portions, wherein the value is obtained by dividing, a smallest value of a difference between a largest value of a thickness of the coating film and a thickness at a vertex of the coating film convex portion, by a largest value of the difference between the largest value of a thickness of the coating film and the thickness at the vertex of the coating film convex portion,

a base portion, which is a portion of the outermost surface of the eyeglass lens other than the coating film convex portions, converges light rays entering from an object-side surface of the lens substrate and emitted from an eyeball-side surface of the lens substrate onto a convergence position A,

the coating film convex portions converges the light rays entering into the lens and emitted from the eyeball-side surface onto convergence position B, which is closer to an object than convergence position A, thereby providing a myopia progression suppression effect,

a stray-light ratio of the lens, which indicates a ratio of stray-light rays which do not pass through a vicinity of the convergence position A and a vicinity of the convergence position B, is 15% or less,

the stray-light ratio is obtained by measuring a smallest unit which is a circular region entirely including another of the coating-film-convex portions located at a shortest distance from a referential center that is one of the coating-film-convex portions,

a diameter of the circular region defined as the smallest unit is 4.0 mm,

the stray-light ratio is obtained by steps of:

measuring a surface shape of the lens;

generating curved-surface data of a convex-surface shape of the lens based on the measured surface shape;

setting a model of the lens based on the generated curved-surface data;

specifying a position, at which the rays converge most when the rays have passed through the lens, is the vicinity of the convergence position A as well as the vicinity of the convergence position B by a ray-tracing process,

the vicinity of the convergence position A is in a radius range of 2.5 to 20 μm from the convergence position A, and

the vicinity of the convergence position B is in a radius range of 2.5 to 20 μm from the convergence position B.