CLAIMS

1. An optical system intended to be worn in front of an eye of a wearer comprising:

- an optical lens having at least a control point, and
- an optical device comprises a plurality of optical elements, the optical device being attached on a surface of the optical lens or encapsulated into the optical lens,

wherein

- each optical element has simultaneously two different optical functions,
- the optical device and the optical lens are configured so that the absolute value of the difference between a measured optical power at a point, for example at the control point, of the optical system and the optical power corresponding to the prescription for said eye of the person is smaller than or equal to 0.12 diopter, and
- at least part of the optical elements are diffractive lenses, said diffractive lenses comprising two main diffractive orders, the first main diffractive order providing a first mean optical power smaller in absolute value than or equal to 0.25 diopter, and the second main diffractive order providing a second mean optical power greater than or equal to 0.5 diopter.

2. The optical system according to claim 1, configured so that for at least one optical element the absolute value of the difference between at least one optical power measured through said optical element of said optical system and the optical power measured through the corresponding part of the optical lens alone is smaller than or equal to 0.25 diopter.

3. The optical system according to claim 1 or 2, wherein the first optical function is an optical function with a mean optical power smaller than or equal to 0.25 diopter

4. The optical system according to any of the preceding claims, wherein the second optical function of at least part of the optical elements has a mean optical power greater than or equal to 0.5 diopter.

5. The optical system according to any of the preceding claims, wherein the second optical function of at least part of the optical elements is so as to not focus an image on the retina of the eye when the optical system is worn in standard wearing conditions so as to slow down the progression of the abnormal refraction of the eye.

6. The optical system according to any of the preceding claims, wherein the optical device is attached on the front surface of the optical lens or on the back surface of the optical lens or is inserted inside the optical lens.

7. The optical system according to any of the preceding claims, wherein at least part, for example all of, the optical elements are contiguous.

8. The optical system according to any of the preceding claims, wherein at least part of, for example all of, the optical elements are arranged along a plurality of concentric rings.

9. The optical system according to any of the preceding claims, wherein at least part, for example all, of the optical elements are π-Fresnel lenses.

10. The optical system according to any of the preceding claims, wherein the optical elements have a squared shape contour or a hexagonal shape contour and are arranged according to a predefined array, for example a square or a hexagonal array.

11. An optical device intended to be placed on a surface of an optical lens in order to add an optical power of said optical lens, said optical device comprising a plurality of optical elements, wherein each optical element has simultaneously two different optical functions that provides simultaneously:

- a first mean optical power smaller in absolute value than or equal to 0.25 diopter, and
- a second mean optical power greater than or equal to 0.5 diopter.

12. A method for providing an optical system intended to be worn in front of an eye of a wearer, wherein the method comprises the steps of:

- providing an optical lens configured to provide to the wearer in standard wearing conditions a correction optical power based on the prescription for the wearer for correcting an abnormal refraction of said eye of the wearer,
- providing an optical device according to claim 11,
- forming an optical system by placing the optical device on one surface of the optical lens or by encapsulating the optical device into the optical lens.

13. A method for providing an optical system intended to be worn in front of an eye of a wearer, wherein the method comprises the step of casting the optical system and during the casting step providing an optical device according to claims 11, to be inserted in the casted lens.