CLAIMS

1. A method for the manufacture of a transmissive optical system from a plastic blank, wherein material ablation is achieved on the blank with an ablative plastic-vaporizing laser, wherein the focal diameter of the ablative laser lies between 5 µm and 50 µm; wherein the pulse duration of the ablative laser is less than 1 ns and the pulse energy, which corresponds to the ablation thickness per pulse, lies between 0.1 µJ and 10 µJ and varies in time depending on the position of the blank, wherein the pulse energy is changed by changing the pulse power or the pulse duration, wherein the ablative laser effects a material ablation of 0.01 to 10 µm per pulse.

2. The method in accordance with claim 1, wherein the blank, initially treated with the ablative laser, is further processed with a polishing laser having a beam diameter at the blank of between 0.1 mm and 8 mm.

3. The method in accordance with claim 1, wherein the blank has a circular cross-section and an optical density towards the centre that differs from that towards the edge.

4. The method in accordance with claim 1, wherein during processing, the process temperature is monitored and/or controlled with a pyrometer.

5. The method in accordance with claim 1, wherein the blank is symmetrically formed on one side, and on another side is processed asymmetrically or in a free-form manner.

6. The method in accordance with claim 1, wherein an eye of a patient is first measured and a data set is thereby generated, and the ablative laser and/or the polishing laser is subsequently controlled on the basis of the data of this data set.

7. The method in accordance with claim 1, wherein with the laser radiation the material of the blank is altered such that the finished lens has an optical density gradient.

8. The method in accordance with claim 1, wherein the optical system is an intraocular lens.

9. The method in accordance with claim 1, wherein the ablative laser is operated such that it effects a material ablation of 0.02 µm to 5 µm.

10. The method in accordance with claim 1, wherein the ablative laser is operated with a laser wavelength of less than 400 nm.

11. The method in accordance with claim 1, wherein the focal diameter of the ablative laser lies between 20 µm and 50 µm.

12. The method in accordance with claim 1, wherein the scanning rate of the ablative laser lies between 500 and 5,000 mm/s.

13. The method in accordance with claim 1, wherein the repetition rate of the ablative laser lies between 5 kHz and 5,000 kHz.

14. The method in accordance with claim 2, wherein the polishing laser is operated with a laser wavelength between 1 and 12 µm.

15. The method in accordance with claim 2, wherein the polishing laser is operated continuously.

16. The method in accordance with claim 2, wherein a beam of the polishing laser is formed into a line by means of a scanning movement, with a scanning rate of 500 mm/s to 20,000 mm/s.

17. The method in accordance with claim 2, wherein with the polishing laser less than 30 passes are carried out.

18. The method in accordance with claim 1, wherein an ablation profile is created that is arbitrarily manipulated or varied from individual patient data by varying the pulse energy perpendicular to the beam direction of propagation.