

Method for producing an optical system and optical system

Abstract

5 The invention relates an optical system and to a method for producing it. The optical system has at least two separate optical components (10, 11) and at least one optical connection between the two optical components (10, 11). The method here comprises the following steps:

- 10 a) providing a first optical component (10) and a second, separate optical component (11), wherein the first optical component (10) has a first beam profile (30) and the second optical component (11) has a second beam profile (31);
- b) designing the optical system by specifying an arrangement of the first optical component (10) and the second optical component (11) and form and target position of at least one beam-shaping element (40, 41), wherein the beam-shaping element
15 (40, 41) is fixedly connected to the first optical component (10) and/or to the second optical component (11), wherein the beam-shaping element (40, 41) is designated to change the first beam profile (30) and/or the second beam profile (31) such that, after positioning of the first optical component (10) and of the second optical component (11), an optical coupling between the first optical component (10) and the second
20 optical component (11) is formed;
- c) producing the beam-shaping element (40, 41) using a three-dimensional direct-writing lithography method in situ at the target position, as a result of which at least one optical component (15, 16) which is supplemented by the beam-shaping element (40, 41) is obtained; and
- 25 d) positioning and fixing the optical component (15, 16), which is supplemented by the beam-shaping element (40, 41), on a common base plate (50), as a result of which the optical system is obtained.

30 The optical systems produced with the present method can preferably be used in optical data transfer, measurement technology and sensors, life sciences and medical technology, or optical signal processing.

(Figure 2)