OPTICAL WAVEFRONT MODIFIER INCLUDING A SERIES ARRANGEMENT OF TRANSPARENT RESISTORS BETWEEN ELECTRODES AND SCANNING DEVICES INCLUDING SUCH A MODIFIER

Inventors: Sjoerd Stallinga, Eindhoven (NL); Jeroen Wals, Eindhoven (NL); Joris Jan Vrehen, Eindhoven (NL)

Assignee: Koninklijke Philips Electronics N.V., Eindhoven (NL)

Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 417 days.

Appl. No.: 09/914,093
PCT Filed: Dec. 19, 2000
PCT No.: PCT/EP00/12991
PCT Pub. No.: WO01/48748
PCT Pub. Date: Jul. 5, 2001

Prior Publication Data

Foreign Application Priority Data
Dec. 24, 1999 (EP) 99204524

Int. Cl. G11B 7/135

U.S. Cl. 369/112.02, 369/112.01

Field of Search 369/112.01, 112.02

Relevant Literature and Information Sources

References Cited

U.S. PATENT DOCUMENTS
5,173,598 A 12/1992 Baxk ................. 250/202
5,495,461 A * 2/1996 Komma et al. ........ 369/112.1
6,078,554 A * 6/2000 Ootaki et al. ........ 369/112.02
6,125,388 A * 9/2000 Ogasawara ........... 369/44.32
6,480,454 B1 * 11/2002 Wada et al. ........ 369/112.02
6,625,102 B1 * 9/2003 Hashimoto ............ 369/112.16

FOREIGN PATENT DOCUMENTS

OTHER PUBLICATIONS

* cited by examiner

Primary Examiner—Hoa T. Nguyen
Assistant Examiner—Michael V. Battaglia

ABSTRACT

An optical wavefront modifier (27) is adapted for modifying a wavefront of an optical beam passing through the modifier. The modifier comprises a first and a second transparent electrode layer (42, 43) and a flat medium (46) for modifying the wavefront in dependence on electrical excitation and arranged between the electrode layers. The first electrode layer (42) comprises three or more electrodes (51–55) of a transparent, conductive material. The electrode layer also comprises a series arrangement of resistors, comprising three terminals (48, 48, 48') connected to the electrodes and resistors (49, 49') connecting the terminals. The resistors are made of the same transparent conductive material as the electrodes.

16 Claims, 9 Drawing Sheets