

ABSTRACT

The invention relates to measurement technology. The technical result consists in increasing the accuracy, reliability and efficiency with which measurements are taken. A device comprises a source of white light and a source of laser radiation, which are connected to a measuring head by respective optical fibre sections. Arranged in the measuring head are a first lens which forms a predetermined indicatrix of illumination of a monitored object from the stream of white light, a second lens which forms a converging stream of laser radiation, and a diffractive optical element which is arranged at a distance from the second lens and forms an image comprising small intensity spots on the surface of the monitored object. Also arranged in the measuring head is an optical stereo camera which, on the basis of the produced image, forms a stereoscopic image which is converted into a three-dimensional image using a microcontroller, in order to identify identical points in space of the objects in the stereo images with a predetermined degree of reliability.