

ABSTRACT**Compact Head-Mounted Display System Having Uniform Image**

There is disclosed an optical device, including a light-transmitting substrate having an input aperture, an output aperture, at least two major surfaces and edges, an optical element for coupling light waves into the substrate by total internal reflection, at least one partially reflecting surface located between the two major surfaces of the light-transmitting
5 substrate for partially reflecting light waves out of the substrate, a first transparent plate, having at least two major surfaces, one of the major surfaces of the transparent plate being optically attached to a major surface of the light-transmitting substrate defining an interface plane, and a beam-splitting coating applied at the interface plane between the substrate and the transparent plate, wherein light waves coupled inside the light-
10 transmitting substrate are partially reflected from the interface plane and partially pass therethrough.

FIG. 4