

DIRECTIONAL FLAT ILLUMINATORS

Abstract

Disclosed is an optical valve or light valve for providing large area collimated illumination from localized light sources, and system and method thereof for 2D, 3D, and/or autostereoscopic displays. An optical valve may include a stepped structure, in which the steps include separated extraction features which may be optically hidden to light propagating in a first direction. Light propagating in a second direction may be refracted, diffracted, or reflected by the features to provide illumination beams exiting from the top surface of the optical valve. Such controlled illumination may provide for efficient, multi-user autostereoscopic displays as well as improved 2D display functionality.

Figure 4B