

### **Beam splitter comprising stratified volume holographic gratings**

A light beam splitter comprises stratified volume holographic gratings. More specifically, the beam splitter is formed of a small plate of optically homogeneous glass, a first layer of photosensitive resin applied to a first surface of the plate of glass and having an exposed surface formed with a first diffraction grating, and a second layer of photosensitive resin applied to the second surface of the plate of glass and having an exposed surface formed with a second diffraction grating. The plate of glass, situated between the first and second layers of photosensitive resin, forms a buffer zone. In operation, an incident light beam penetrating the first grating is propagated through the first layer of photosensitive resin, the plate of glass, and the second layer of photosensitive resin. The first and second gratings split this incident beam into a given number of homogeneous light beams outgoing from the second grating. The beam splitter may comprise a plurality of layers of photosensitive resin, each pair of consecutive resin layers being separated by a plate of glass forming a buffer zone between these two layers.

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