

MULTIPLE CHANNEL ACOUSTO-OPTIC MODULATORS

ABSTRACT

A multichannel acousto-optic modulator (MCAOM) is described which uses a crystal (12) with mounting faces for acoustic transducers (13a, 13b). The mounting faces are oriented so that the acoustic transducers mounted thereon generate acoustic fields which intersect the incident laser beam (16) at a common angle, i.e., the Bragg angle. A two channel MCAOM uses two transducers. Extension to any higher number of channels follows accordingly.

Energizing any of the transducers causes a corresponding first order beam (14a, 14b) to be diffracted out. Since the acoustic field for each transducer intersects the incident beam with a unique orientation, each first order beam is diffracted out on a unique axis.

A system utilizing an MCAOM has electronic means for controlling the driving signals to the transducers to control each channel as required by the application. Amplitude and frequency modulation of the driving signals allows the intensity and angle of the beams to be controlled.

Figure 1

This Sheet Has Been Replaced

