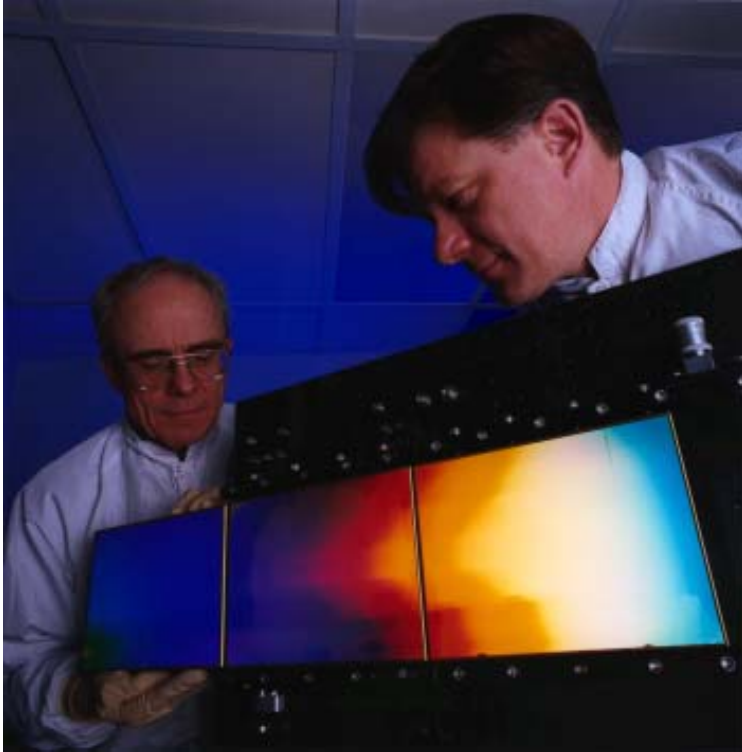


About the Cover:



The realization of multikilojoule, multipetawatt laser systems will require very-large-area diffraction gratings to achieve compression of the laser pulse width prior to focusing on target. At present, it is not possible to manufacture monolithic gratings suitable for the OMEGA EP laser; however, Senior Research Engineer Terry Kessler (right) and Research Engineer Joe Bunkenburg show how smaller diffraction gratings can be tiled to create what is effectively a single large-area optic. In this issue, they conclusively demonstrate that a multiple-grating assembly can be aligned to behave as a single optic. These results have enabled the OMEGA EP project team to design large-aperture-grating compressors using commercially available optics. Indeed, the gratings designed for the OMEGA EP compressor will consist of three subgratings where each grating is about four times the area of those shown in the photograph.

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