

Abstract Submitted
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A High Power Amplifier for a Single Mode 1064 Laser R.W. STITES, K.M. O'HARA, The Pennsylvania State University — We report on the construction of a high power amplifier system for a single mode 1064 nm laser. At the heart of this device is a 0.27% neodymium doped yttrium orthovanadate crystal that is double end pumped by two 30 Watt broadband diode arrays at 808 nm. For a 50 Watt TEM₀₀ single frequency seed laser, we have observed an amplified power output in excess of 60 Watts for single pass configuration. A further increase in output power can be attained by retroreflecting the beam back through the crystal a second time. Such a device has direct application in the construction of optical lattices where high power single frequency lasers are required.

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