

Abstract Submitted
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High Power Diode Pumped Cesium Lasers JERRY SELL, BORIS ZHDANOV, RANDY KNIZE, United States Air Force Academy — We will discuss high power cesium vapor lasers pumped by multiple laser diode arrays. Previously a single laser diode array (LDA) has been shown to efficiently optically pump (63% overall optical efficiency) a cesium vapor laser.¹ The LDA operates at 852 nm which pumps the Cs D_2 line, with a buffer gas present (ethane) at 500 torr which quenches the $6P_{3/2}$ state to the $6P_{1/2}$ state. Lasing then occurs back to the ground state at 894 nm. This setup succeeded in achieving a continuous wave output power of 10 W. Two similar laser diode arrays were used to pump a rubidium cell, where the output power was measured to be 17 W with a total optical efficiency of 46%. Our progress using multiple LDA's to pump a Cs cell will be given, for both continuous wave and pulsed operation.

¹B. Zhdanov and R.J. Knize, Opt. Lett. **32** (15), 2167 (2007).

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