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High average power Q-switched 1314 nm two-crystal Nd:YLF laser

R. C. Botha,[1,2,]* W. Koen,[3] M. J. D. Esser,[3,4] C. Bollig,[3,5] W. L. Combrinck,[1,6] H. M. von Bergmann,[2] and H. J. Strauss[3]

[1]HartRAO, P.O. Box 443, Krugersdorp, 1740 South Africa
[2]Stellenbosch University, P/Bag X1, Matieland, 7602 South Africa
[3]National Laser Centre, CSIR, PO Box 395, Pretoria, 0001 South Africa
[4]Formerly at CSIR, now at Heriot-Watt University, EH14 4AS Edinburgh, UK
[5]Formerly at CSIR, now at Abacus Laser, Göttingen, Germany
[6]Department of Geography, Geoinformatics and Meteorology, University of Pretoria, Pretoria 0132, South Africa

*Corresponding author: roelf@hartrao.ac.za

Abstract

A 1314 nm two-crystal Nd:YLF laser was designed and operated in both CW and actively Q-switched modes. Maximum CW output of 26.5 W resulted from 125 W of combined incident pump power. Active Q-switching was obtained by inserting a Brewster-cut acousto optic modulator. This setup delivered an average power of 18.6 W, with a maximum of 5.6 mJ energy per pulse with a pulse duration of 36 ns at a pulse repetition frequency of 500 Hz.