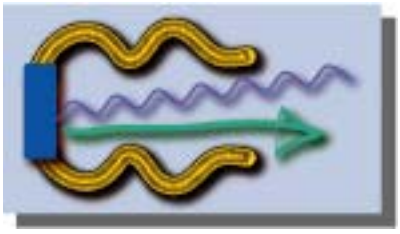

PHIN

Design and testing of amplifiers for the CTF3 photo-injector laser

M. Divall, G. Kurdi, I. Musgrave, E. Springate, W. Martin, G.J. Hirst and I.N. Ross
Central Laser Facility, CCLRC Rutherford Appleton Laboratory, Chilton, Didcot, Oxon., OX11 0QX
V. Fedosseev, N. Champault, G. Suberlucq and R.Losito
CERN, Geneva, Ch-1211 23 Switzerland

Abstract

We present the design and preliminary test results for the two diode-pumped Nd:YLF amplifiers of the CTF3 photo-injector. These are designed to amplify a 1.5 GHz train of pulses to provide 3 kW pulse-train mean power in a 400 μs macropulse after the first amplifier and 15 kW in a 200 μs macropulse after the second. Tests of the first amplifier show good agreement with our calculations, with the output power exceeding 3.3 kW.

Work supported by the European Community-Research Infrastructure Activity under the FP6 « Structuring the European Research Area » programme (CARE, contract number RII3-CT-2003-506395).