

Efficient, High-Power Tm-Doped Silica Fiber Lasers

Glen Rines and Peter F. Moulton

Q-Peak, Inc., 135 South Road, Bedford, Massachusetts 01730

moulton@qpeak.com

781-275-9535 X601

Gavin Frith

Nufern, Inc., 7 Airport Park Road, East Granby, Connecticut 06026

Abstract:

In prior work, we have reported generation of 300 W of cw power from a Tm:silica fiber laser at 2050 nm, with >60% conversion of pump power to laser output power. The beam quality was close to the diffraction limit. We have also noted that we plan to scale the system to the 1-kW power level. To date, we have received and tested two 1-kW, fiber coupled, diode pump lasers, and have shown the ability to couple power efficiently from the diode lasers into the larger-cladding fibers we plan to use for the 1-kW fiber laser. In the work to be presented here, we will report on our results with this new effort in Tm: fiber-laser power scaling.

Oral presentation preferred

Classification: Public Release