Development of diode end-pumped Nd: YLF lasers at 1 314 nm for high power operation

Several diode end-pumped 1,3 \( \mu \)m Nd: YLF lasers have been developed for lunar ranging applications with the final objective to measure subcmorbital positions of the moon. A novel laser diode end-pumping scheme, utilising YLF crystals with low average Nd doping and natural axial doping gradient, and pumping from the lower-doping crystal side has resulted in maximum cw laser output of 26,5 W and actively Q-switched pulse output of 5,6 mJ with pulse duration of 36 ns and average power of 18,6 W. These are the highest reported values for any actively Q-switched end-pumped Nd: YLF laser at 1 314 nm.

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