

Dual-stage gain-clamped erbium-doped fiber amplifier with fiber Bragg grating

ABSTRACT

We demonstrate a dual-stage gain-clamped erbiumdoped fiber amplifier. The first-stage amplifier consists of a short length of erbium-doped fiber to produce low noise figures. The second-stage is constructed from a counter-propagating ringlaser, in which the signals and the lasing wavelength propagate in the opposite direction. The lasing wavelength is selected via a reflective-type of fiber Bragg grating. The gain-clamping mechanism can be adjusted by either changing the fiber Bragg grating reflectivity or center wavelength. The noise figure penalty is about 1.5 dB for the gain-clamping value from 11 dB to 20.5 dB. (© 2008 by Astro Ltd., Published exclusively by WILEY-VCH Verlag GmbH & Co. KGaA)

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