

ABSTRACT

DIODE LASER, INTEGRATED DIODE LASER, AND INTEGRATED SEMICONDUCTOR
OPTICAL AMPLIFIER

The invention relates to three types of laser light sources: a diode laser, integral diode laser (in the form of integrally connected diode lasers) and an integral semiconductor optical amplifier (in the form of integrally connected driving laser diode and semiconductor amplifier element), which amplifier consists of the original optical resonator of a diode laser and an original laser radiation coupling. Two reflectors in the optical resonator of the diode laser, which falls into the three types of the above-mentioned laser radiation sources, have the greatest possible reflection factor on both sides thereof and the radiation coupling from an active layer is carried out, by-passing the active layer, through broadband semiconductor layers of the inventive modified heterostructure of the diode laser with a practically fully antireflective (less than 0.01%) optical face. The invention makes it possible to design superpower, high-performance, high-speed and reliable three types of sources of single-frequency, single-mode and multi-mode high quality laser radiation in a broad wavelength band, to simplify the production and cut in the production costs thereof.

Fig. 4