

ABSTRACT OF THE DISCLOSURE

Provided is a laser optical system using optical fibers for transmitting laser light generated from an oscillator that can shape the laser light generated from the laser oscillator into a linear beam with a cross section having a small width even when the
5 optical fibers are provided with a relative large core diameter. The laser optical system using optical fiber transmission comprises a first optical fiber (3) for transmitting laser light emitted from a laser oscillator (2), a collimator lens (4) for collimating laser light emitted from the first optical fiber (3), a spherical array lens including a plurality of
10 cells (5a) for converging laser light emitted from the collimator lens (4) into a plurality of spots, a plurality of second optical fibers (6) each having a smaller core diameter than the first optical fiber and configured to admit the laser light converged into the corresponding spot by the spherical array lens, the second optical fibers having output ends that have mutually parallel axial lines and are arranged linearly in a single row,
15 and a linearization optical unit (7-11) for shaping laser light emitted from the second optical fibers into laser light having a linear cross section at an illuminated surface.

Designated drawing: figure 2