

A MULTIPURPOSE DEVICE FOR TRANSMITTING RADIATION FROM A SOURCE TO AN OBJECT

ABSTRACT

The invention relates to an antenna design and may be used for effectively concentrating radiation emitted by a distributed source on an object placed in the focal area of the antenna.

The technical result achieved by the use of the claimed invention consists in greater efficiency of radiation transmission from a source to an object, the possibility of radiation power variation, a more uniform concentration of radiation, a significant increase in the volume of the focal area without replacing the radiation source itself, increased reliability of the system, and reduced power requirements.

The claimed technical result is achieved in a multipurpose device for transmitting radiation from a source to an object comprising two antennas, each designed as a truncated segment of a curved surface, established with the formation of the joint focal zone reconfigurable, concentration and volume by varying the distance between the antennas, a distributed source of radiation provided in the aperture plane of at least one of the antennas or in one of the focal areas of each antenna, and an object placed in the combined focal area of the two antennas. The curved surface of each antenna may be a spherical or cylindrical surface, and the distributed source of radiation is provided in the aperture plane of at least one of the antennas. The antennas may be arranged opposite, or at an angle to, one another to produce a combined focal area.

This technical result is also achieved by further providing the multipurpose device with at least an additional pair of spherical or cylindrical antennas in a plane normal to the plane of the first pair of antennas.

Fig. 1