SIMULATION OF THE PROPAGATION OF HEAT RAYS OF SEGMENT REFLECTOR

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The possibility of replacing the curved shape of the reflective surface of the reflector in the food industry machines utilizing infrared heating elements, in the form of segments of straight lines. The study carried out by the example forms reflector provides uniform distribution of heat flow on a flat surface of the cylindrical reflector. Simulation of thermal distribution is carried out by constructing a three-dimensional model of the camera with the appointment of surface properties. The process of assessing the distribution of the heat flow is investigated by computer simulation program in TracePro. The program allows to simulate the rays’ path in the chamber, as well as to evaluate the heat flux density on the receiving surface. The simulation is carried out with some simplifications: only the radiant component of heat flux is taken into account, while convection is not considered as its component is negligible.

Keywords: reflector, emitter, reflection.