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COORDINATE-SENSITIVE MICROELECTRONIC DETECTOR

The term “Coordinate-sensitive microelectronic detector” means a device for one dimensional simultaneous detection of separated in the space electron flow, falling on the working surface of the detector. Laser mass spectrometry is one of the most beneficial applications of this detector, but these detectors can be successfully used in other areas where one-dimensional spatial detection of charged and neutral particles is required. In general dimensions and resolving capacity of the detector are determined by collector’s number which collects the electrons charge, its dimension and pitch. Each collector has its own charge to digit converter completed bodily on one semiconductor chip. Charge to digit conversion mechanism is defined by direct calculating charge’s portions (number of electrons) drops to collector. To ensure that sensitivity allows registering of individual ions, the detector has an integrated assembly of two microchannel plates arranged in front of the surface of the receiving electrodes. Structurally, the detector is designed as a ceramic-based monoblock, which is mounted on the chip detector assembly of microchannel plates and the necessary interface connectors. Overall dimensions of the detector assembly is 40x25x5mm. Size of the sensitive area is 2x10mm.

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