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ORDELA MODEL 4420X X-RAY BEAM MONITOR

DESCRIPTION

The ORDELA Model 4420X is a split-cathode ionization chamber designed for precise measurement of x-ray beam intensity and lateral position at synchrotron radiation sources. The instrument is housed in a 5.7-cm-wide, 3.5-cm-deep, and 5.7-cm-long aluminum enclosure. This enclosure contains the 1.5-cm-wide and 4.5-cm-long anode and a split-cathode plates separated by 0.64 cm and centered in the active volume. The cathode plate is split diagonally to enable beam-position sensing across its width by measuring the ratio of the currents detected on the two cathode segments. Two 1-cm-diameter, 0.5-mm-thick beryllium disks are centered one each of the two side faces of the enclosure so the x-ray beam can enter, pass between the anode and cathode segments, and exit the chamber with minimum attenuation. Two 1/16-inch NPT feed-through connectors allow filling the chamber with the appropriate counting gas mixture at pressures between 0 and 1500 torr in a gas-flow mode. An SHV feed-through connector allows biasing the anode at up to +5 kV, and two BNC feed-through connectors allow connecting the cathode segments to the electrometer circuits. We recommend the ORDELA Model IS-20 Dual Electrometer Module (sold separately) for current sensing with the Model 4420X Beam Monitor for optimum performance and noise reduction. The cathode operates at ground potential. The cathode segments are surrounded by guard rings for optimum noise reduction.

SPECIFICATIONS

COUNTING GAS:	Customer specified
GAS PRESSURE:	Vacuum to 1500 torr, operating in gas-flow mode
SENSITIVE AREA:	1 cm wide, 4 cm long
SPATIAL UNCERTAINTY:	100 : m across the cathode (1%) for $>10^{-8}$ A beam current
FEED-THROUGHS:	One SHV connector for anode biasing; two BNC connector for current outputs from the cathode segments; two 1/8" NPT connectors for gas in- and out-lets.
DIMENSIONS:	5.7 cm high, 3.5 cm deep, 5.7 cm long
SHIPPING WEIGHT:	2 kg

Drawing of ORDELA Model 4420X Position-Sensitive X-Ray Monitor outline and dimensions available upon request.

WARRANTY

ORDELA, Inc. warrants its products to be free from defects in materials and workmanship for 12 months after shipment. No other warranty is included. Specifically, no warranty of merchantability or fitness for a particular purpose is implied. ORDELA's liability under this warranty is limited to repairing or replacing the product at ORDELA's option. This warranty is void if the product is operated improperly, disassembled, or modified other than in the ORDELA laboratory.