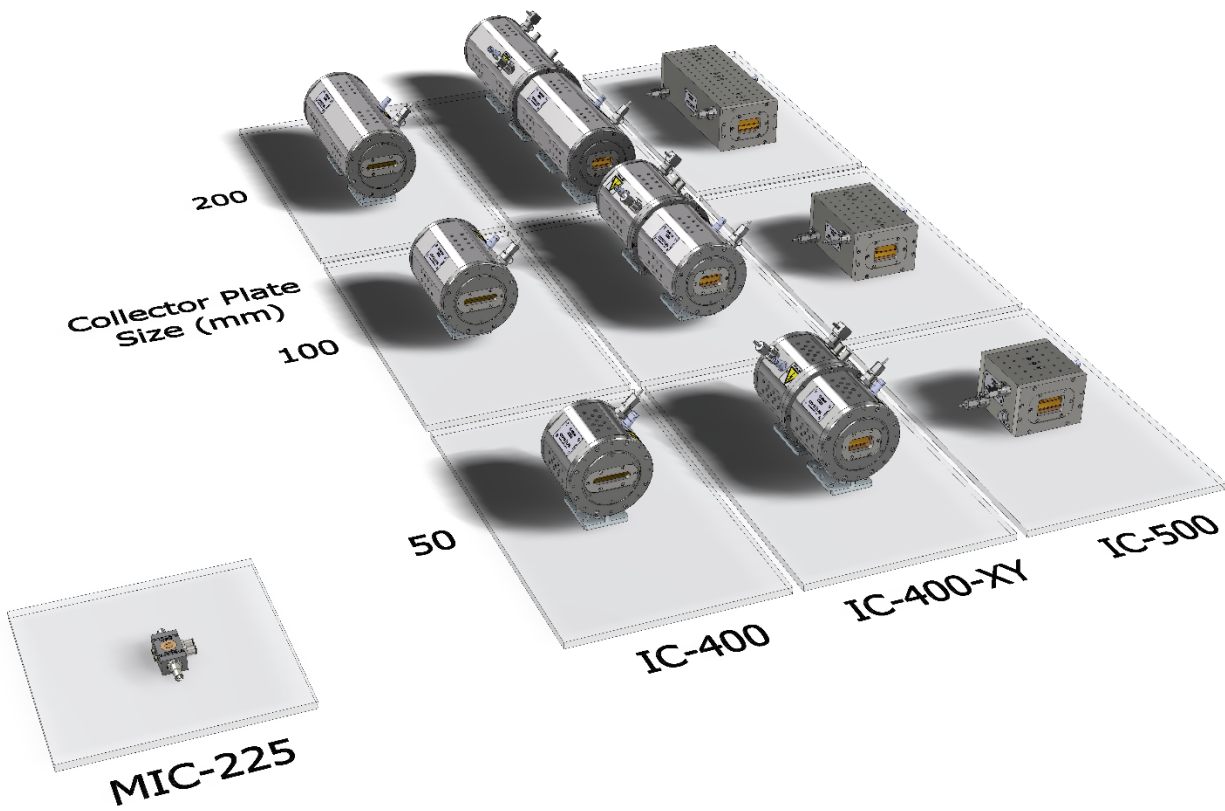




Ion Chambers

IC-400, IC-500, & MIC-225 series



June 2023


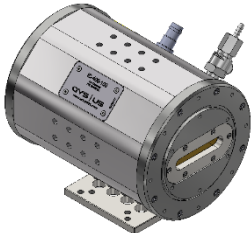
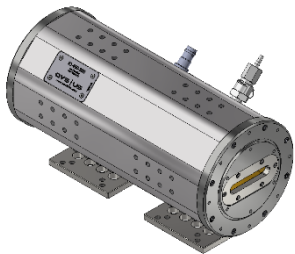
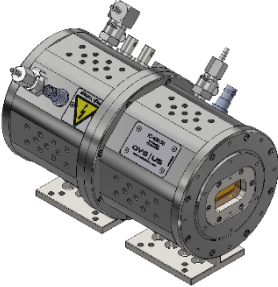

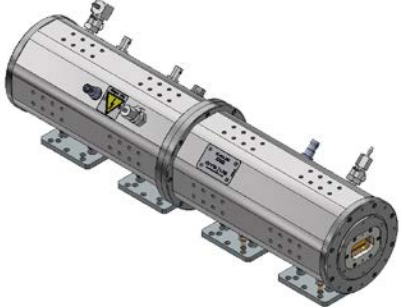
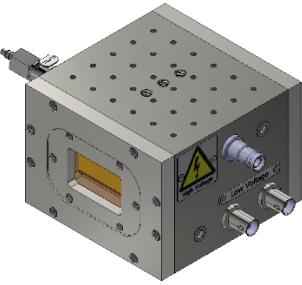
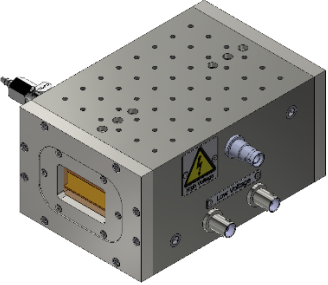
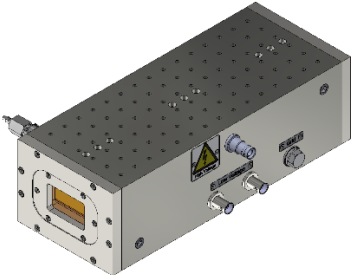


OVERVIEW

The ion chambers are designed for precise, low noise x-ray measurement.

The electrodes are constructed of gold-plated copper on fiberglass supports, all housed within a nickel-plated aluminum frame. Each electrode is connected to an SHV connector. ¼" push to connect style fittings comprise the gas connections.

The system can be configured for air, vacuum, or ultra-high vacuum operation through one of three interfaces. The air system stands alone mounted to the system table. The vacuum configuration interfaces through a NW40 style bulkhead fitting. The IC-400 & IC-500 series precision ion chambers incorporate a split collector plate. The electrode is split in a saw tooth configuration with a height of approximately 10mm, 15mm, and 25mm such that, when the differential current is computed, allows use as a beam position monitor.

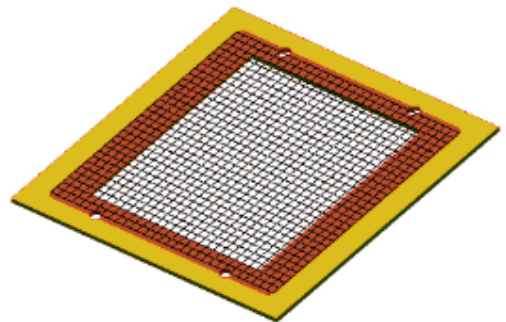
IC-400 Series		
		
IC-400-50	IC-400-100	IC-400-200
IC-500 XY Series		
		
IC-400-50-XY	IC-400-100-XY	IC-400-200-XY
IC-500 Series		
		
IC-500-50	IC-500-100	IC-500-200

IC-400 & IC-500 SPECIFICATIONS

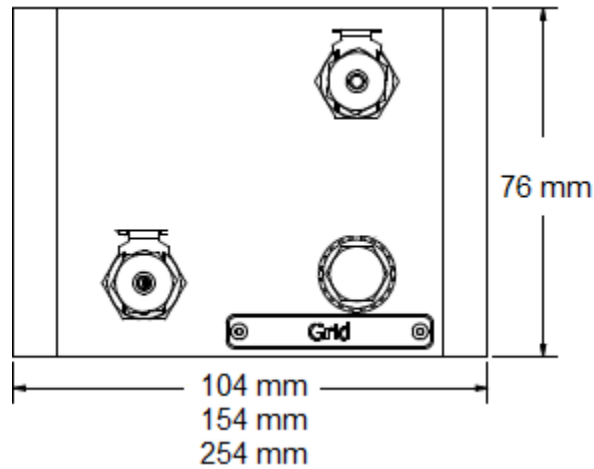
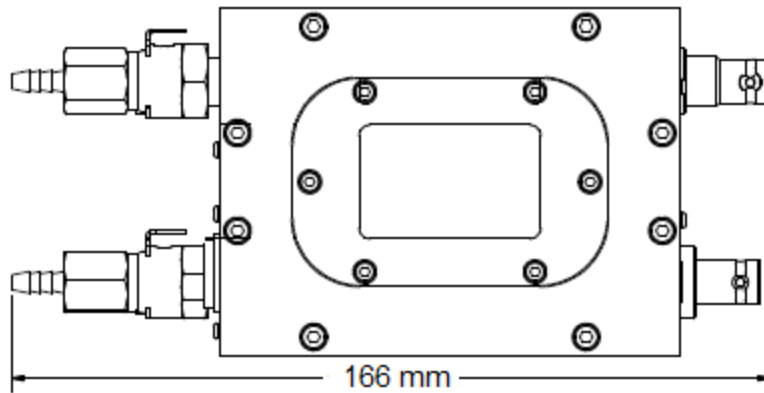
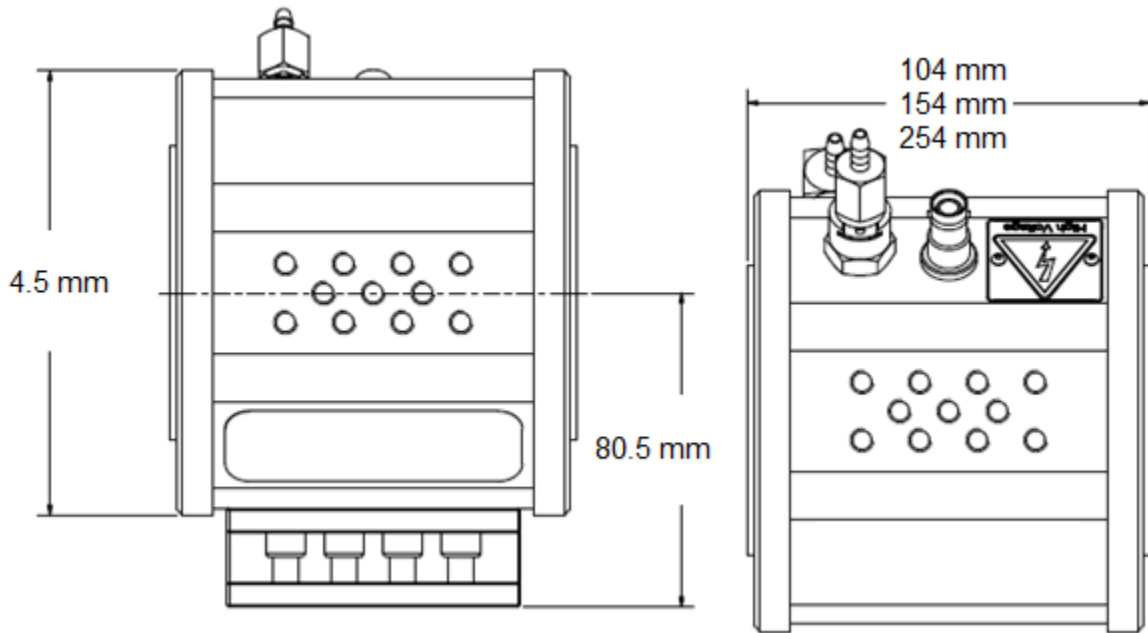
Windows	25µm Kapton foil factory installed + Kapton film kit included: 25, 50, 125µm
Body Material	Aluminum alloy
Electrode Gaps	10, 15, 20, 25mm (User adjustable)
Electrodes	Gold plated with guard rings
Working pressure	0.7 - 1.3 Bar Absolute
Operating potential	Up to 1.7 KV
Maximum pressure drop	< .0375 bar/min
Gas Connectors	<u>Chamber Gas Fitting:</u> 1002, 1/4" hose 'push-to-connect' <u>Gas Adapter Insert:</u> MCD2202 1/8" hose barb in-line coupling
Electrical Connectors	<u>Low Voltage Electrode:</u> Standard 50ohm Female BNC <u>High Voltage Electrode:</u> Standard SHV <u>Gridded Option:</u> Standard SHV
Adapter Kits (ONLY AVAILABLE FOR 400 SERIES)	NW25 IC-400 Adapter Kit, NW40 IC-400 Adapter Kit NW50 IC-400 Adapter Kit 4.5" IC-400 Conflate Adapter Kit

GRIDDED ION CHAMBER OPTION

Using the new gridded ionization chamber, the ionization current reacts only to the presence of electrons within the electric field while the ion charges are ignored. Eliminating the effects of the slow-moving ions reduces the rise time by roughly at least 10 orders of magnitude. AVS|US has developed this design as an add-in to its entire ion chamber line.

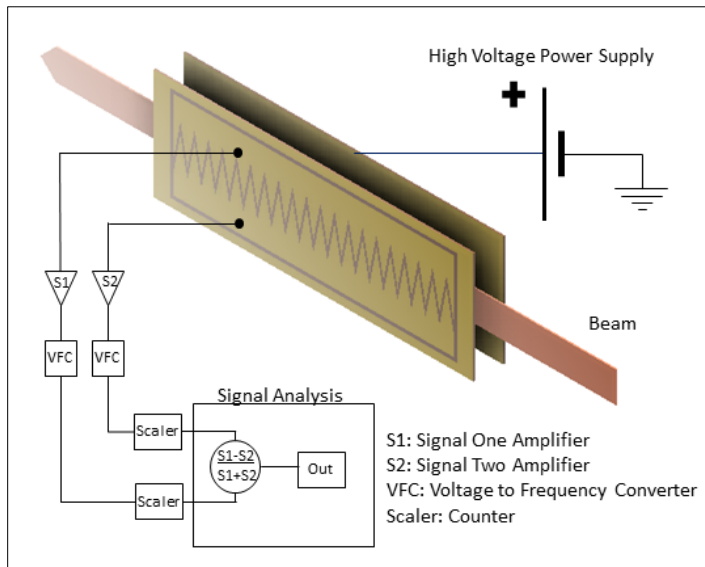


IC-400 & IC-500 SIMPLE DIMENSIONS

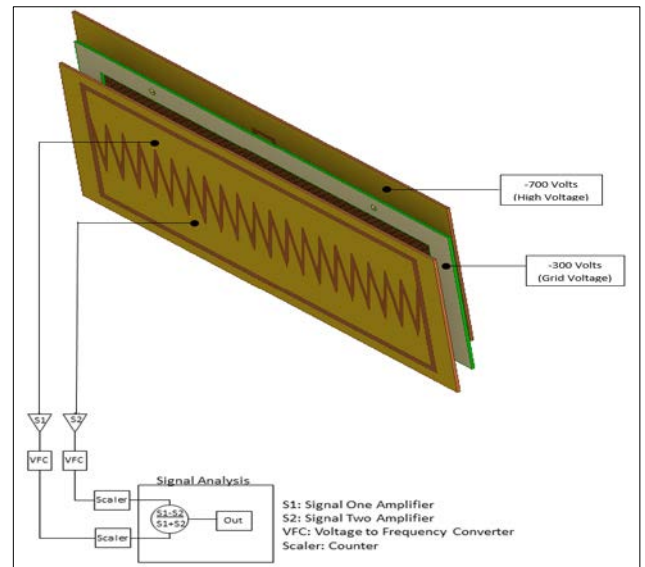


ELECTRICAL HOOK UP

Non-Gridded



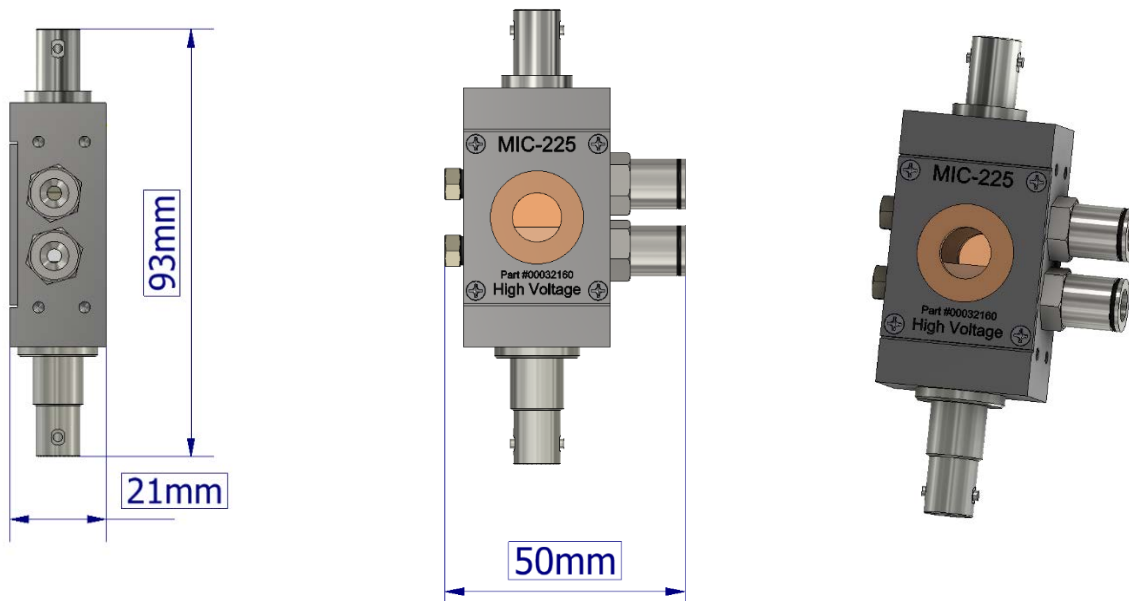
Gridded



MICRO ION CHAMBER

A small ionization chamber detector was developed for monitoring the intensity of hard X-ray beam for Synchrotron facilities around the world. The small dimensions of the ionization chamber (20 mm along the beam direction and 30 mm perpendicular to it) make it possible to place it very close to the sample.

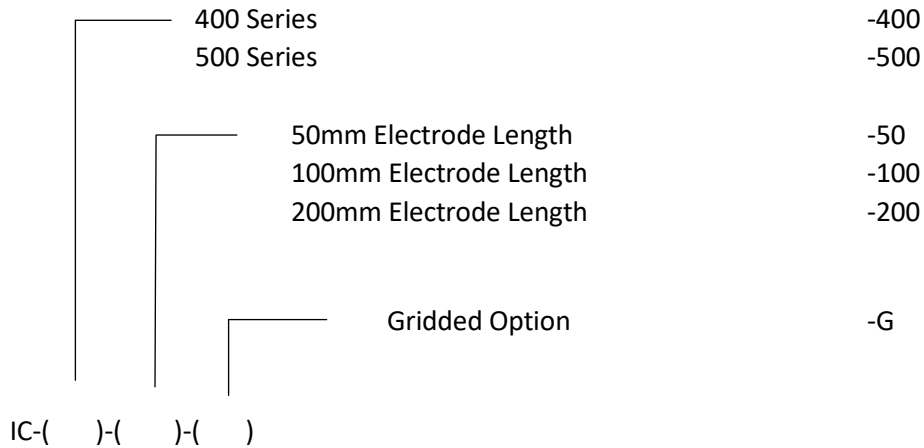
The housing of the detector is made of stainless steel, nickel-plated copper electrodes; SHV and BNC electrical connectors; and gas connectors.



ORDERING INFORMATION

Ion Chambers can be ordered with different foil configurations, please use the codes provided below when ordering.

Please call or e-mail to ask about customization if your application requires it.



For example, an ion chamber 400 series with a 50mm Electrode length, with the gridded option would be denoted by: IC-400-50-G

***The Micro Ion Chamber is only denoted by the part number MIC-225**

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