



IONIZATION CHAMBERS

Ionization Chambers for Industrial Applications

Our chambers are mainly used in radiometric thickness, basis weight and density measurement technology as traversing measuring systems. They serve as sensors for the transmission or backscattering process.

Characterized by their compact design, stability and long service life, they are suitable to be used in the field of sophisticated industrial applications. The chambers are temperature stable and, with their time constants of just a few milliseconds, are ideally suited for fast measuring processes.

As radiation entrance windows we use foils made of stainless steel, titanium, aluminum, beryllium or plastic, which are glued vacuum tight to the housings of stainless steel or aluminum by using the latest adhesive technologies. High precision welding is used to connect steel foils with steel housings ensuring an excellent tightness of the chambers. They are filled with high purity gases like argon, krypton or xenon depending on the specific application at the corresponding pressure level.

Shown below and on the next page are the basic types of ionization chambers for industrial applications. The area mass measuring range is defined by the used source. All chambers can be operated with different nuclides and X-ray energies, limited by the used window foils, the gas filling and the gas pressure.



Proposal according application

A) Measurement of low energy beta radiation (Pm-147)

175 00 04, 194 00 01, 195 00 02, 195 00 14

B) Measurement of beta radiation (Kr-85, Sr-90)

173 00 02, 174 00 04, 174 00 12, 177 00 01, 177 00 03, 180 00 04, 181 00 02, 181 00 12, 191 00 08, 195 00 01, 195 00 12, 195 00 13, 196 00 01, 197 00 01, 197 00 02

C) Measurement of low energy X-radiation $E > 3$ keV (Fe-55, Cd-109)

175 00 04, 194 00 01, 195 00 02, 195 00 05, 195 00 06, 195 00 07, 195 00 08, 195 00 14, 196 00 03

D) Measurement of X- and gamma radiation $E > 30$ keV (Am-241)

174 00 04, 174 00 12, 177 00 01, 177 00 03, 180 00 04, 181 00 02, 181 00 12, 191 00 08, 191 00 10, 195 00 01, 195 00 12, 195 00 13, 196 00 01, 197 00 01, 197 00 02

E) Measurement of high energy X-radiation and Cs-137

114 00 01, 116 00 02



Product Overview

Ionization chambers with stainless steel housing

Ionization chambers with aluminum housing

Type	REF No.	Filling		Window			Dimensions		Operating temperature range (°C)
		Gas	Pressure abs. (bar)	Material	Thickness (µm)	Area (cm ²)	d _{max} (mm)	h _{max} (mm)	
70 114	114 00 01	Xenon	20*	no window	-	-	80	80	15 ... 80
70 116	116 00 02	Xenon	25*	no window	-	-	109	233	15 ... 80
70 173	173 00 02	Krypton	3*	Steel	25	54.1	117	90	15 ... 80
70 174	174 00 04	Xenon	3*	Steel	25	54.1	117	81	15 ... 80
	174 00 07	Xenon	5*	Steel	50	54.1	117	92	15 ... 80
	174 00 12	Xenon	1.95	Steel	15	54.1	117	92	15 ... 60
70 175	175 00 04	Argon	1.95	Mylar	50	43	117	81	15 ... 60
70 177	177 00 01	Argon	2.5*	Steel	50	154	165	144	15 ... 80
	177 00 03	Xenon	2.5*	Steel	50	154	165	144	15 ... 80
70 180	180 00 04	Xenon	3*	Steel	25	54.1	117	92	15 ... 80
70 181	181 00 02	Xenon	5*	Steel	50	54.1	117	92	15 ... 80
	181 00 12	Xenon	1.95	Steel	15	54.1	117	92	15 ... 60
70 191	191 00 08	Xenon	3*	Steel	25	12.5	45	81	15 ... 80
	191 00 10	Xenon	4.5*	Steel	25	12.5	45	117	15 ... 80
70 194	194 00 01	Argon	1.2	Aluminum	25	15	50	87	15 ... 60
70 195	195 00 01	Xenon	3*	Steel	25	38	77	129	15 ... 80
	195 00 12	Xenon	2.7*	Steel	25	38	77	129	15 ... 80
	195 00 13	Xenon	1.95	Steel	25	38	77	129	15 ... 80
	195 00 02	Argon	1.2	Aluminum	25	24	77	129	15 ... 60
	195 00 05	Argon	1.5	Aluminum	50	24	77	129	15 ... 60
	195 00 06	Xenon	1.95	Beryllium	125	24	77	129	15 ... 80
	195 00 07	Xenon	1.05	Beryllium	125	24	77	129	15 ... 80
	195 00 08	Argon	1.4	Beryllium	125	24	77	129	15 ... 80
	195 00 14	Argon	1.5	Mylar	50	24	77	133	15 ... 60
70 196	196 00 01	Xenon	2.4*	Steel	25	63.6	100	114	15 ... 80
	196 00 03	Argon	1.1	Beryllium	125	45.6	100	114	15 ... 80
70 197	197 00 01/02	Xenon	4*	Steel	25	45.6	89	101	15 ... 80

* Delivery in pressure resistant transport equipment.

For detailed technical information please request our data sheets.
Other specifications available upon request.

Accessories

We offer a high-quality amplifier system including chamber high voltage supply as accessories. They can be used separately or combined in a special housing.

Customized Solutions

All high quality ionization chambers are manufactured according to customer requirements. The basic types can be adapted to individual measuring tasks by using alternative window foils (aluminum, titanium, plastic, beryllium), filling gases (argon, krypton, xenon) or gas pressures (limited by the used window foils).

