

product specification

Gamma ionization chamber

Application : The CRGB10 ionization chamber is intended to measure high intensity gamma radiations in nuclear power plants, uranium reprocessing plants or from ^{60}Co sources. It allows measurements up to 125 °C for dose rates up to 10^5 Gy.h^{-1} . The gas characteristics are adapted to the requirements.

Unless otherwise stated, all characteristics are given at 20°C

Nuclear characteristics (1)

Sensitivity to ^{60}Co g-rays :			
filled with Xenon		7.2×10^{-8}	A/Gy.h ⁻¹
filled with Nitrogen		6×10^{-10}	A/Gy.h ⁻¹
Gamma dose rate range (2) :			
filled with Xenon		10^{-5} to 2×10^2	Gy.h ⁻¹
filled with Nitrogen		10^{-3} to 10^5	Gy.h ⁻¹
Exposure limits :	max	10^9	Gy

Electrical characteristics

Insulating resistance at 600 V :	min	10^{12}	Ω
Operating voltage (3) :			
nominal up to 125 °C	from 200 to 1 000	V	
maximum at 20 °C		1 200	V
limit with no radiation		1 500	V

Mechanical and physical characteristics

Detector :			
materials :			
outer shell			stainless steel
electrodes			high purity aluminium
insulator			Al_2O_3
filling gas (4) :			Xenon or Nitrogen
pressure	1 500 (Xe) or 100 (N ₂)		kPa

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Dimensions :

nominal diameter	48	mm
detector length	137	mm
sensitive length	30	mm

Connector :

type (5) :	female HN
insulator	PTFE

Environmental characteristics

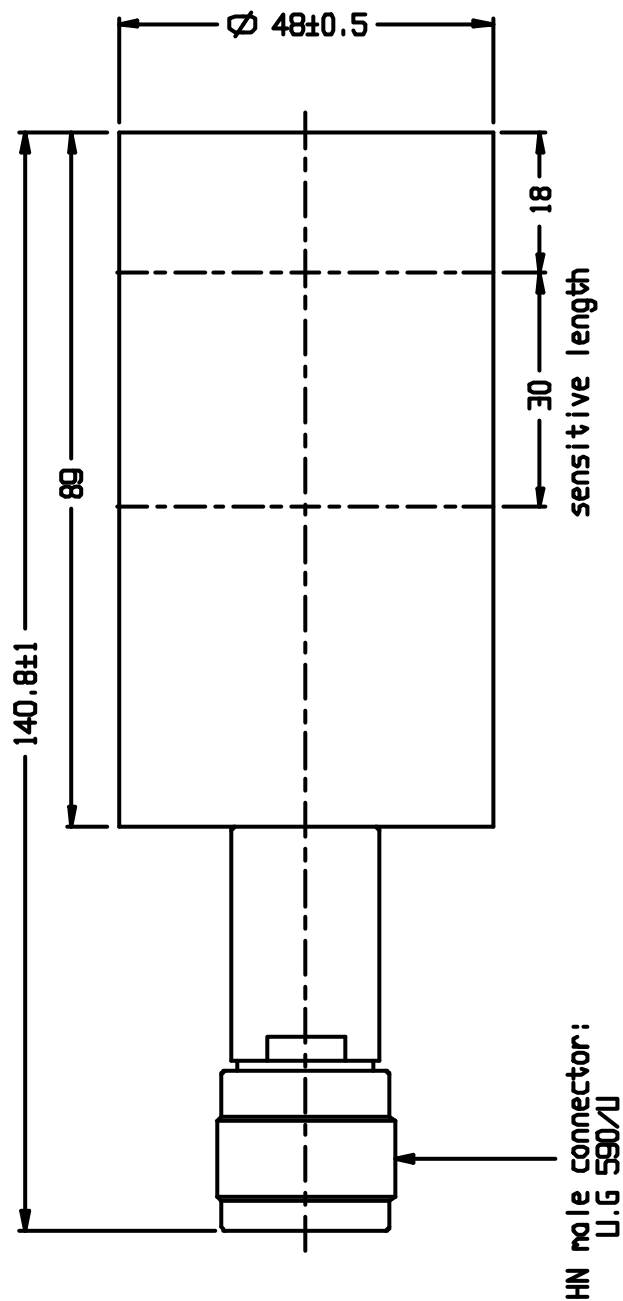
Operating temperature (6) :	max	125	°C
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- (1) All characteristics are given for ^{60}Co gamma-ray energy (1.25 MeV).
- (2) The lower limit highly depends on the capability of the measurement equipment to separate the useful signal from the background (leakage current).
- (3) The operating voltage depends on the γ dose rate to be measured.
- (4) Other characteristics are possible by adjusting the gas pressure. Request when ordering.
- (5) In order to avoid humidity penetration during storage, the HN connector is closed with a cap to be removed just before use. As a general rule, prevent any humidity penetration at the connection level (refer to "Instructions for use and handling" in the package).
- (6) Including temperature increase due to gamma radiation. The leakage current in the cables increases rapidly with temperature. It is therefore necessary to take into account this characteristic, which limits the maximum temperature so that the ratio of wanted signal/parasitic signal remains acceptable.

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All dimensions in mm



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