

Geiger-Mueller Tube

Type 70 013
Order No. 013 00 56

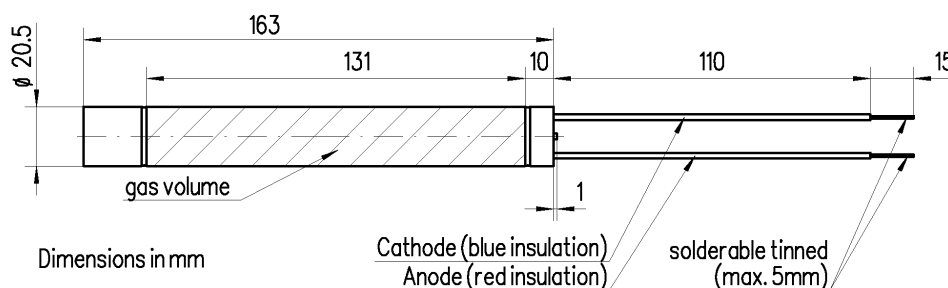
Application

The counter tube 70 013 is a halogen quenched Geiger-Mueller counter for measuring X-ray and γ -radiation with high counting efficiency. Due to the constancy of its parameters and high mechanical stability even at high temperatures, it is suitable for industrial installations and for dosimetry within the range of the natural environment.

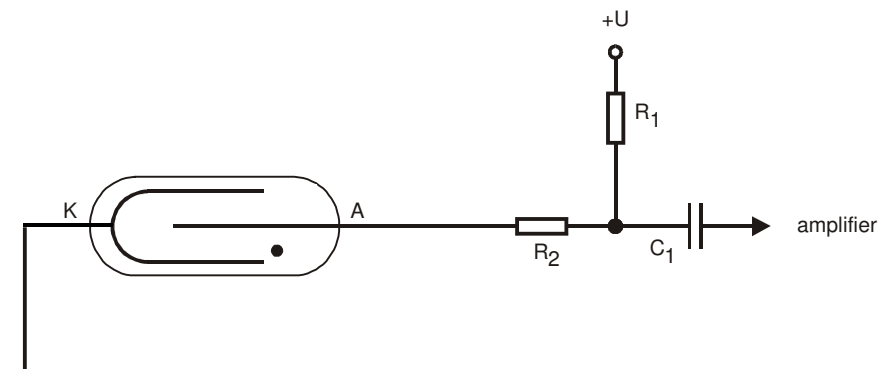
Construction Type

Chrome iron counter tube with solderable wires

Mechanical Data



Measuring Circuit



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Technical Data

(All data refer to 25 °C ambient temperature as well as to the recommended operation conditions.)

Physical data

Quantum efficiency (662keV, ^{137}Cs)	0.1 count/s / Photon/cm ² /s
Dose sensitivity (662keV, ^{137}Cs)	10 count/s / µGy/h
Dose rate range	(0.2 ... 8·10 ³) µGy/h
Photon energy range	> 30 keV
Background (shielded by 5 cm Pb with a 2 mm Al surface)	≤ 1 count/s
Length of active volume	131 mm
Cathode diameter	20.5 mm
Anode diameter	2 mm
Mass	45 g
Filling gas	Neon/Halogen
Life expectancy	> 6·10 ¹⁰ count

Electrical data

Starting voltage	< 350 V
Plateau voltage range	(400 ... 600) V
Plateau length	> 200 V
Plateau slope	< 0.1 %/V
Recommended supply voltage	500 V
Recommended anode resistor R ₂	≥ 4.7 MΩ
Dead time (R ₂ = 4.7 MΩ)	≤ 100 µs
Anode to cathode capacitance	≤ 5 pF

Limiting values

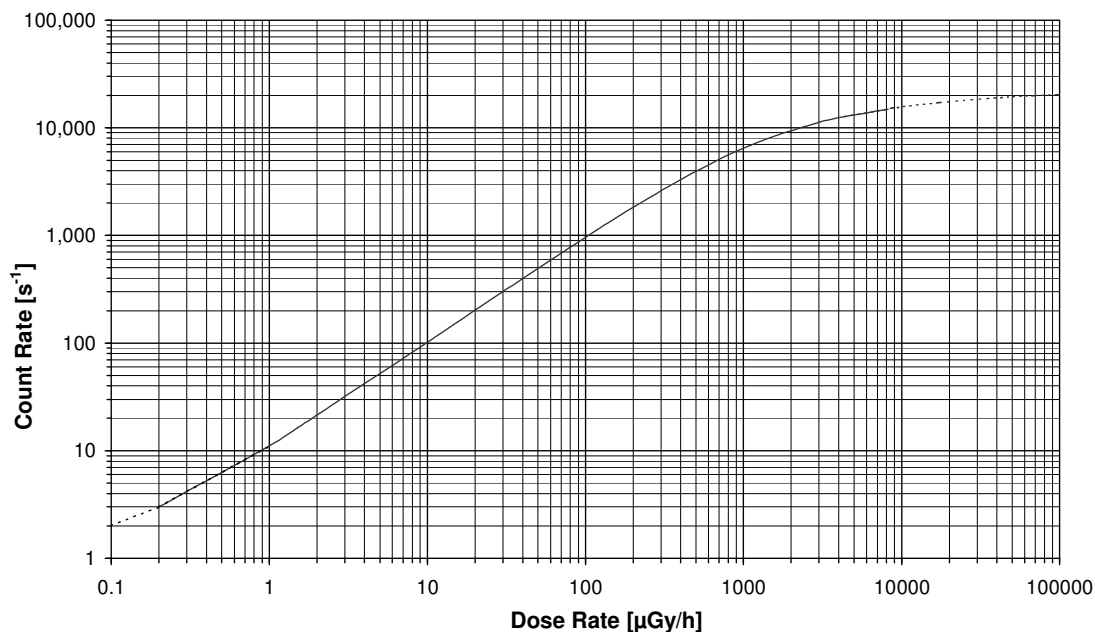
Storage temperature range	(−55 ... +70) °C
Operating temperature range	(−40 ... +70) °C



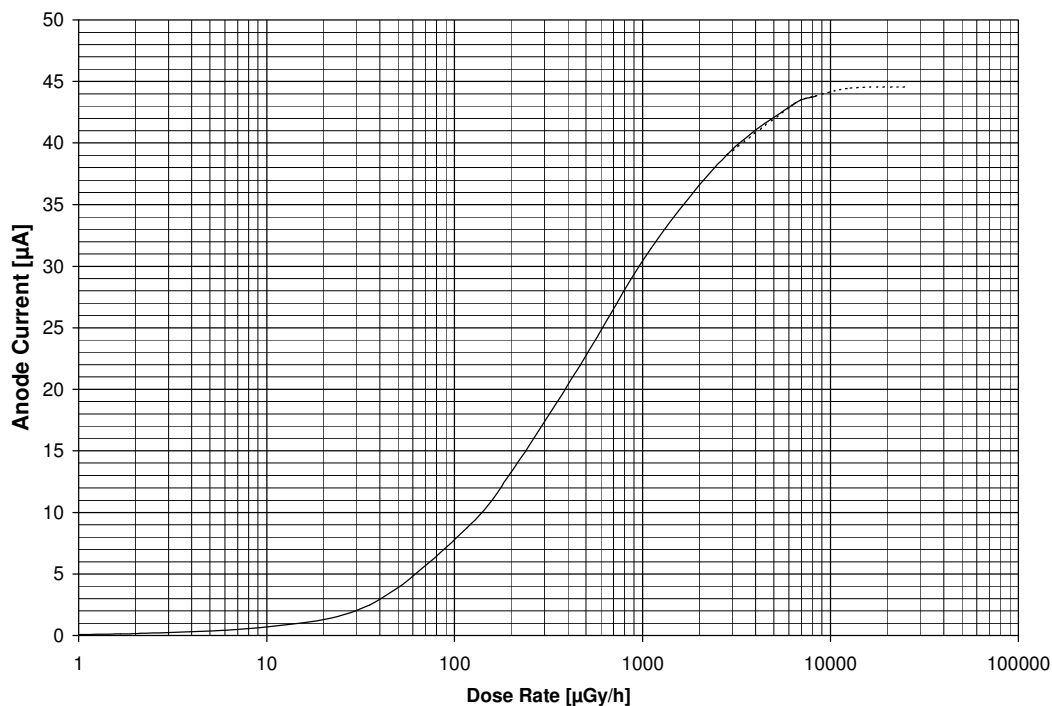
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Count rate vs. dose rate (for ^{137}Cs)



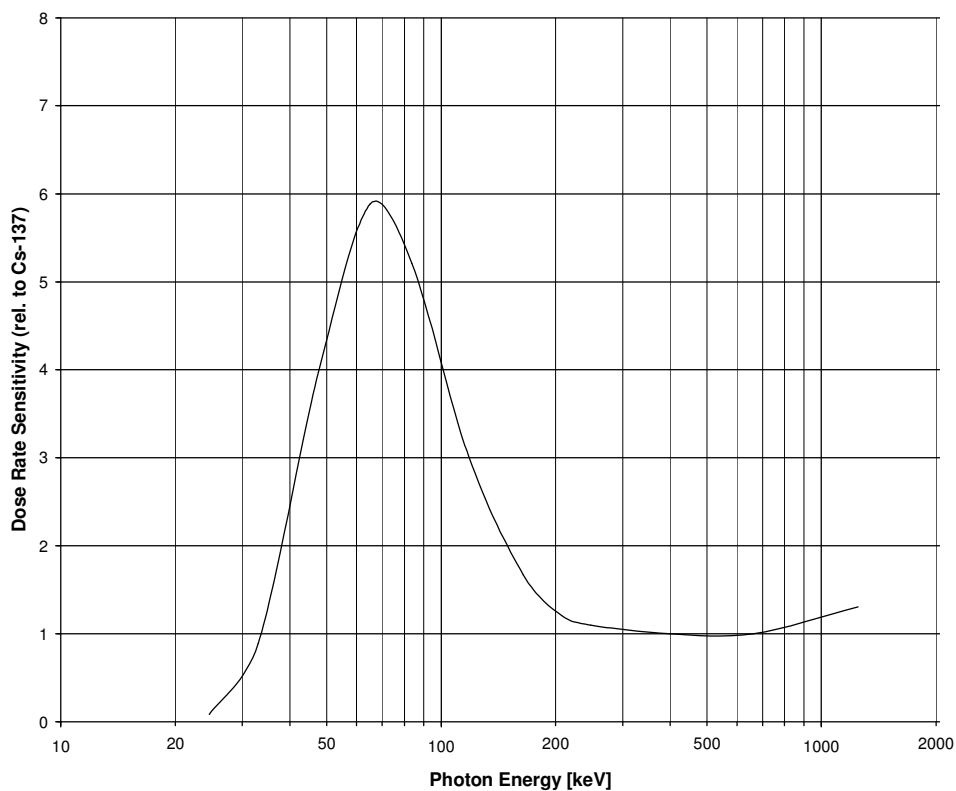
Anode current vs. dose rate (for ^{137}Cs)





Dose sensitivity vs. photon energy

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Quantum efficiency vs. photon energy

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