



MIRION
TECHNOLOGIES

PROTK & RAMSYS

KG 220 SEF™

Gamma Ionization Chamber

Low and medium range gamma dose rate monitoring in nuclear facilities.



FEATURES

- Wide measuring range up to 100 Gy/h or Sv/h
- Saturation proof
- Robust construction
- Long life time
- Energy range: 80 keV to 7 MeV
- Output signal: DC current starting at 0.1 pA
- Ambient temperature up to 120°C (248°F)

DESCRIPTION

The KG 220 SEF ionization chamber has been developed for low and medium range gamma dose rate monitoring in nuclear facilities. There are two versions with optimized energy response for measuring dose rates in Sievert or Gray units. Gamma radiation produces charged particles (electrons and gas ions) in the gas filling of the ionization chamber. Their discharge on the electrodes causes charge pulses. These charge pulses are integrated to a DC current, which can be measured in the external circuit.

The KG 220 ionization chambers may be connected to signal processing units of the RAMSYS or proTK family.

TECHNICAL CHARACTERISTICS

Properties	KG 220 SEF-Gy	KG 220 SEF-Sv	Acceptable Tolerance
Measuring range	1e-7 Gy/h ... 1 Gy/h 1 Gy/h ... 1e+2 Gy/h	1e-7 Sv/h ... 1 Sv/h 1 Sv/h ... 1e+2 Sv/h	+5% / -20% acceptable deviation of sensitivity +5% / -40% acceptable deviation of sensitivity
Sensitivity Energy range Radiation direction (>100 keV)	1.1e-6 A/(Gy/h) 80 keV ... 3 MeV ±90° to main axis	0.9e-6 A/(Sv/h) 80 keV ... 3 MeV ±90° to main axis	± 10% ± 25% acceptable deviation of sensitivity (IEC 60532) ± 40% acceptable deviation of sensitivity (KTA 1501) ± 20% acceptable deviation of sensitivity
Detector housing Gas filling Option: embedded source	Stainless steel, 4 mm Argon, 32 bar Cs-137, 185 kBq		
Operating voltage Break down voltage Detector background current Detector source current	1400 VDC 2500 VDC 1e-13 A approx. 8e-13 A approx.		± 5% 10 s max. Ambient background With embedded source
Temperature range Short term temperature range External pressure Humidity	-30 ... +100°C (-22 ... +212°F) < 120°C (248°F) 0.7 ... 1.3 bar < 95%		1 h max.
Protection index	IP67 and IK07		
Dimensions (Ø × L, without cables) Diameter of base plate Weight (without cable and connector)	220 mm × 240 mm (8.7 in × 9.5 in) 280 mm (11 in) Approx. 23 kg (51 lb)		
Connectors	Fischer size 105		Max. cable length is depending on signal processing unit (cable capacity)

ACCESSORIES

- TKA 16: calibration source Cs-137 with lead housing and fixture
- TKA 66: calibration source Cs-137 remote operated
- Connection cables: e.g. Raychem 5021B (low noise)
- Digital signal processing units:
 - TK 250 system: e.g. DPK 251 digital signal processing channel with c/f-converter NV 103
 - RAMSYS system: LPU IC or LPDU IC local signal processing units

Featuring:

