

Specifications for SPN and SPG detectors

		5503-Co-210 *)	5503-Rh-50 *)	5503-V-100 *)	5507-Pb- 210 *)
Detector		SPN	SPN	SPN	SPG
Emitter material	**))	Cobalt	Rhodium	Vanadium	Lead
Emitter diameter		2 mm	0,7 mm	2 mm	2 mm
Emitter weight		~ 6 g	~ 0,2 g	~ 2 g	-
Emitter sensitive length	***))	210 mm	50 mm	100 mm	210
Emitter sensitive length	Min-max	20 – 400 mm	20 – 350 mm	20 – 400 mm	50 – 210 mm
Insulator		Al ₂ O ₃	Al ₂ O ₃	Al ₂ O ₃	Al ₂ O ₃
Collector material	****))	Inconel 600	Inconel 600	Inconel 600	Inconel 600
Outer diameter of detector		3,7 mm	2,5 mm	3,7 mm	3,7 mm
Mineral insulated Cable					
Sheath material		Inconel 600	Inconel 600	Inconel 600	Inconel 600
Conductor material		Inconel 600	Inconel 600	Inconel 600	Inconel 600
Insulator		Al ₂ O ₃	Al ₂ O ₃	Al ₂ O ₃	Al ₂ O ₃
Outer diameter of cable		1 or 2 mm	1 mm	1 or 2 mm	2 mm
Conductor		Single or twin	Single or twin	Single or twin	Twin
Cable length		On request	On request	On request	On request
Characteristics					
Measured quantity		Neutron flux	Neutron flux	Neutron flux	Gamma flux
Thermal neutrons signal at: 10 ¹⁴ n*cm ⁻² *s ⁻¹		0,54 µA	0,87 µA	0,51 µA	
Gamma signal		0,01 µA	0,002 µA	0,007 µA	
Gamma sensitivity					~ 9 x 10 ¹⁴ A/Gy/h
Insulation resistance (detector + 15 m cable)	20°C 300°C	> 10 ¹² Ω > 5*10 ⁸ Ω	> 10 ¹² Ω > 5*10 ⁸ Ω	> 10 ¹² Ω > 5*10 ⁸ Ω	> 5*10 ⁸ Ω At max 250°C
Response time		10 ⁻¹⁴ s	1,1 min	5,5 min	
Burn-up rate per month at: 10 ¹⁴ n*cm ⁻² *s ⁻¹		1,0%	3,9%	0,12%	
Life time		20 years	3 years	20 years	
*) Sensitive length of emitter and characteristics					
**) Other emitter material such as platinum and Inconel can be offered on request.					
***) Other sensitive lengths of emitter can be offered on request.					
****) Collector length = Emitter length plus (+) 40 mm for SPND / Emitter length plus (+) 80 mm for SPGD					

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