

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

VF, a.s.
CAB number 2336, VF Calibration Laboratory
Svitavská 588, 679 21 Černá Hora

CMC for the field of measured quantity: Quantities of atomic and nuclear physics

Ord. number ¹	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty ²	Calibration principle	Calibration procedure identification ³	Location
		min	unit	max	unit					
1	Kerma in air (Ka) / Meters of ionizing radiation dosimetry quantities	200·10 ⁻⁹ Gy	to	110·10 ⁻⁸ Gy			3,9 %	Measurement on the OG-8 irradiator	VF 1Q-3P2-0101	
		110·10 ⁻⁸ Gy	to	300·10 ⁻⁷ Gy			2,2 %			
		300·10 ⁻⁷ Gy	to	120·10 ⁻⁵ Gy			2,5 %			
		120·10 ⁻⁵ Gy	to	300 Gy			2,2 %			
	Kerma rate in air (p Ka) / Meters of ionizing radiation dosimetry quantities	300·10 ⁻⁹ Gy·h ⁻¹	to	120·10 ⁻⁷ Gy·h ⁻¹		Position OG-8 ⁴		Measurement on the OG-8 irradiator	VF 1Q-3P2-0101	
						4	2,2 %			
						5	3,9 %			
						7	4,9 %			
		120·10 ⁻⁷ Gy·h ⁻¹	to	710·10 ⁻⁷ Gy·h ⁻¹		4	2,2 %			
						5	3,9 %			
		710·10 ⁻⁷ Gy·h ⁻¹	to	150·10 ⁻⁵ Gy·h ⁻¹		1	2,5 %			
						4	2,2 %			
	Spatial dose equivalent (H*(10)) / Meters of ionizing radiation dosimetry quantities	150·10 ⁻⁵ Gy·h ⁻¹	to	290·10 ⁻⁴ Gy·h ⁻¹		1	2,5 %	Measurement on the OG-8 irradiator	VF 1Q-3P2-0101	
						3	2,2 %			
		290·10 ⁻⁴ Gy·h ⁻¹	to	970·10 ⁻³ Gy·h ⁻¹		2	2,2 %			
						3	2,2 %			
		970·10 ⁻³ Gy·h ⁻¹	to	9 Gy·h ⁻¹		2	2,2 %			
		241·10 ⁻⁹ Sv	to	132·10 ⁻⁸ Sv			3,9 %	Measurement on the OG-8 irradiator	VF 1Q-3P2-0101	
		132·10 ⁻⁸ Sv	to	361·10 ⁻⁷ Sv			2,2 %			
		361·10 ⁻⁷ Sv	to	144·10 ⁻⁵ Sv			2,5 %			
		144·10 ⁻⁵ Sv	to	360 Sv			2,2 %			

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	Spatial dose equivalent rate (H*(10)) / Meters of ionizing radiation dosimetry quantities	361·10 ⁻⁹ Sv·h ⁻¹	to	144·10 ⁻⁷ Sv·h ⁻¹		Position OG-8 ⁴		Measurement on the OG-8 irradiator	VF 1Q-3P2-0101	
						4	2,2 %			
						5	3,9 %			
		144·10 ⁻⁷ Sv·h ⁻¹	to	855·10 ⁻⁷ Sv·h ⁻¹		7	4,9 %			
						4	2,2 %			
						5	3,9 %			
		855·10 ⁻⁷ Sv·h ⁻¹	to	181·10 ⁻⁵ Sv·h ⁻¹		1	2,5 %			
						4	2,2 %			
						1	2,5 %			
		181·10 ⁻⁵ Sv·h ⁻¹	to	349·10 ⁻⁴ Sv·h ⁻¹		3	2,2 %			
						2	2,2 %			
						3	2,2 %			
		349·10 ⁻⁴ Sv·h ⁻¹	to	117·10 ⁻² Sv·h ⁻¹		2	2,2 %			
						3	2,2 %			
						2	2,2 %			
		117·10 ⁻² Sv·h ⁻¹	to	10,8 Sv·h ⁻¹		2	2,2 %			
	Personal dose equivalent (Hp(10)) / Meters of ionizing radiation dosimetry quantities	243·10 ⁻⁹ Sv	to	134·10 ⁻⁸ Sv			3,9 %	Measurement on the OG-8 irradiator	VF 1Q-3P2-0101	
		134·10 ⁻⁸ Sv	to	365·10 ⁻⁷ Sv			2,2 %			
		365·10 ⁻⁷ Sv	to	146·10 ⁻⁵ Sv			2,5 %			
		146·10 ⁻⁵ Sv	to	365 Sv			2,2 %			
	Personal dose equivalent rate (p Hp(10)) / Meters of ionizing radiation dosimetry quantities	365·10 ⁻⁹ Sv·h ⁻¹	to	146·10 ⁻⁷ Sv·h ⁻¹		Position OG-8 ⁴		Measurement on the OG-8 irradiator	VF 1Q-3P2-0101	
						4	2,2 %			
						5	3,9 %			
		146·10 ⁻⁷ Sv·h ⁻¹	to	863·10 ⁻⁷ Sv·h ⁻¹		7	4,9 %			
						4	2,2 %			
						5	3,9 %			

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		863·10 ⁻⁷ Sv·h ⁻¹	to	182·10 ⁻⁵ Sv·h ⁻¹		1	2,5 %			
						4	2,2 %			
		182·10 ⁻⁵ Sv·h ⁻¹	to	352·10 ⁻⁴ Sv·h ⁻¹		1	2,5 %			
						3	2,2 %			
		352·10 ⁻⁴ Sv·h ⁻¹	to	118·10 ⁻² Sv·h ⁻¹		2	2,2 %			
	Photon dose equivalent (Hx) / Meters of ionizing radiation dosimetry quantities					3	2,2 %	Measurement on the OG-8 irradiator	VF 1Q-3P2-0101	
		118·10 ⁻² Sv·h ⁻¹	to	10,8 Sv·h ⁻¹		2	2,2 %			
		228·10 ⁻⁹ Sv	to	126·10 ⁻⁸ Sv			3,9 %			
		126·10 ⁻⁸ Sv	to	342·10 ⁻⁷ Sv			2,2 %			
		342·10 ⁻⁷ Sv	to	137·10 ⁻⁵ Sv			2,5 %			
	Photon dose equivalent rate (p Hx) / Meters of ionizing radiation dosimetry quantities	137·10 ⁻⁵ Sv	to	342 Sv			2,2 %	Measurement on the OG-8 irradiator	VF 1Q-3P2-0101	
		342·10 ⁻⁹ Sv·h ⁻¹	to	137·10 ⁻⁷ Sv·h ⁻¹		Position OG-8 ⁴				
						4	2,2 %			
						5	3,9 %			
						7	4,9 %			
		137·10 ⁻⁷ Sv·h ⁻¹	to	810·10 ⁻⁷ Sv·h ⁻¹		4	2,2 %			
						5	3,9 %			
		810·10 ⁻⁷ Sv·h ⁻¹	to	171·10 ⁻⁵ Sv·h ⁻¹		1	2,5 %			
						4	2,2 %			
		171·10 ⁻⁵ Sv·h ⁻¹	to	331·10 ⁻⁴ Sv·h ⁻¹		1	2,5 %			
						3	2,2 %			
		331·10 ⁻⁴ Sv·h ⁻¹	to	111·10 ⁻² Sv·h ⁻¹		2	2,2 %			
						3	2,2 %			
		111·10 ⁻² Sv·h ⁻¹	to	10,3 Sv·h ⁻¹		2	2,2 %			

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		min	unit	max	unit					
2*	Surface activity of alpha radionuclides (As) / Meters of contamination	7·10 ⁻¹ Bq·cm ⁻²		to	2,5·10 ³ Bq·cm ⁻²		1,4 %	Measurements using planar sources of ionizing radiation	VF 1Q-3P2-0102	
	Activity of alpha radionuclides (A) / / Meters of contamination	20 Bq		to	2·10 ⁵ Bq		1,4 %	Measurements using planar sources of ionizing radiation	VF 1Q-3P2-0102	
	Surface activity of beta radionuclides (As) / / Meters of contamination	2,5·10 ⁻¹ Bq·cm ⁻²		to	2,5·10 ⁶ Bq·cm ⁻²		1,4 %	Measurements using planar sources of ionizing radiation	VF 1Q-3P2-0102	
	Activity of beta radionuclides (A) / / Meters of contamination	4·10 ¹ Bq		to	2·10 ⁶ Bq		1,4 %	Measurements using planar sources of ionizing radiation	VF 1Q-3P2-0102	
3*	Kerma in air (Ka) / Meters of ionizing radiation dosimetry quantities	8·10 ⁻² Gy		to	2,5·10 ⁴ Gy		5,4 %	Measurements using a comparator	VF 1Q-3P2-0103	
	Kerma rate in air (p Ka) / Meters of ionizing radiation dosimetry quantities	5 Gy·h ⁻¹		to	2,5·10 ⁴ Gy·h ⁻¹		5,4 %	Measurements using a comparator	VF 1Q-3P2-0103	

¹ Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

² The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M a part of CMC and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the measured value. The uncertainty value stated herein is based on the best conditions achievable by the laboratory; the uncertainty value of a specific calibration may be higher depending on the conditions of such a calibration. For identical extreme values of adjacent ranges, the lower uncertainty value always applies.

³ If the document identifying the calibration procedure is dated only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).

⁴ OG-8 is gamma irradiator, the number indicates the scaled radionuclide source in the irradiator

"This document is an appendix to the certificate of accreditation. In case of any discrepancies between the English and Czech versions, the Czech version shall prevail, both for the certificate appendix and the certificate itself."