

Ionizing Radiation, Slovenia

MIRS/IJS/F-2,O-2 (MIRS/Jozef Stefan Institute/Low and Medium Energy Physics F2, Environmental Sciences O2)

Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty					Reference Standard used in calibration		NMI Internal Service Identifier	Comments
Quantity	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage factor	Level of confidence	Relative expanded uncertainty?	Reference standard	Source of traceability		

DOSIMETRY

Personal dose equivalent rate penetrating (in 10 mm depth)	Dosimeter	Calibration on ISO water slab phantom against a calibrated monitor chamber free in air	5.00E-04	1.00E-02	Sv h-1	X-ray, 40 kV	ISO-4037, Narrow-spectrum Series, 40 kV, max. 30 mA	5	%	2	95%	Yes	Graphite cavity ionisation chamber	MKEH	EUR-RAD-MIRS/IJS/F-2,O-2-1001	Approved on 13 November 2015
Personal dose equivalent rate penetrating (in 10 mm depth)	Dosimeter	Calibration on ISO water slab phantom against a calibrated monitor chamber free in air	5.00E-04	1.00E-02	Sv h-1	X-ray, 50 kV to 150 kV	ISO-4037, Narrow-spectrum Series, 50 kV to 150 kV, max. 30 mA	5	%	2	~95%	Yes	Graphite cavity ionisation chamber	MKEH	EUR-RAD-MIRS/IJS/F-2,O-2-1002	Approved on 13 November 2015
Personal dose equivalent rate penetrating (in 10 mm depth)	Dosimeter	Calibration on ISO water slab phantom against a calibrated monitor chamber free in air	1.00E-06	3.00E-03	Sv h-1	Cs-137	ISO-4037 86 GBq (1. 12. 2013)	5	%	2	~95%	Yes	Graphite cavity ionisation chamber	MKEH	EUR-RAD-MIRS/IJS/F-2,O-2-1003	Approved on 13 November 2015
Personal dose equivalent rate penetrating (in 10 mm depth)	Dosimeter	Calibration on ISO water slab phantom against a calibrated monitor chamber free in air	1.00E-06	3.00E-05	Sv h-1	Co-60	ISO-4037 278 MBq (1. 12. 2013)	5	%	2	~95%	Yes	Graphite cavity ionisation chamber	MKEH	EUR-RAD-MIRS/IJS/F-2,O-2-1004	Approved on 13 November 2015

MIRS/IJS/F-2,O-2 (MIRS/Jozef Stefan Institute/Low and Medium Energy Physics F2, Environmental Sciences O2)

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Personal dose equivalent rate penetrating (in 10 mm depth)	Dosimeter	Calibration on ISO water slab phantom against a calibrated monitor chamber free in air	2.00E-05	2.00E-04	Sv h-1	Am-241	ISO-4037 179 GBq (1. 12. 2013)	5	%	2	~95%	Yes	Graphite cavity ionisation chamber	MKEH	EUR-RAD-MIRS/IJS/F-2,O-2-1005	Approved on 13 November 2015
Air kerma rate	Dosemeter, ionisation chamber	Calibration against a calibrated monitor chamber free in air	5.00E-04	1.00E-01	Gy h-1	X-ray, 40 kV	ISO-4037, Narrow-spectrum Series, 40 kV, max. 30 mA	3	%	2	~95%	Yes	Free air parallel plate ionisation chamber	PTB	EUR-RAD-MIRS/IJS/F-2,O-2-1006	Approved on 13 November 2015
Air kerma rate	Dosemeter, ionisation chamber	Calibration against a calibrated monitor chamber free in air	5.00E-04	1.00E-01	Gy h-1	X-ray, 50 kV to 150 kV	ISO-4037, Narrow-spectrum Series, 50 kV to 150 kV, max. 30 mA	3	%	2	~95%	Yes	Free air parallel plate ionisation chamber	PTB	EUR-RAD-MIRS/IJS/F-2,O-2-1007	Approved on 13 November 2015
Air kerma rate	Dosemeter, ionisation chamber	Calibration against a calibrated monitor chamber free in air	5.00E-02	5.00E-01	Gy h-1	X-ray, 50 kV to 120 kV	IEC 61267 RQR Series, 50 kV to 120 kV, max. 30 mA	3	%	2	~95%	Yes	Free air parallel plate ionisation chamber	PTB	EUR-RAD-MIRS/IJS/F-2,O-2-1008	Approved on 13 November 2015
Air kerma rate	Dosemeter, ionisation chamber	Calibration against a calibrated monitor chamber free in air	3.00E-03	3.00E-01	Gy h-1	X-ray, 50 kV to 120 kV	IEC 61267 RQA Series, 50 kV to 120 kV, max. 30 mA	3	%	2	~95%	Yes	Free air parallel plate ionisation chamber	PTB	EUR-RAD-MIRS/IJS/F-2,O-2-1009	Approved on 13 November 2015

MIRS/IJS/F-2,O-2 (MIRS/Jozef Stefan Institute/Low and Medium Energy Physics F2, Environmental Sciences O2)

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RADIOACTIVITY

Activity per unit mass	Reference material: building materials	Gamma ray spectrometer, balance	1.00E+01	5.00E+05	Bq kg-1	Pb-210	Matrix phosphogypsum, cylindrical geometry (diameter from 6 to 9 cm, height from 1 to 6 cm), density from 1 to 3 g cm ⁻³	10	%	2	~95%	Yes	Calibrated HPGe spectrometer, CRM (multigamma aqueous solution), set of standard weights	LNE-LNHB (Bq) MIRS (kg)	EUR-RAD-MIRS/IJS/F-2,O-2-2001	Approved on 13 November 2015
Activity per unit mass	Reference material: building materials	Gamma ray spectrometer, balance	2.00E+00	1.00E+04	Bq kg-1	Ra-226	Matrix phosphogypsum, cylindrical geometry (diameter from 6 to 9 cm, height from 1 to 6 cm), density from 1 to 3 g cm ⁻³	15	%	2	~95%	Yes	Calibrated HPGe spectrometer, CRM (multigamma aqueous solution), set of standard weights	LNE-LNHB (Bq) MIRS (kg)	EUR-RAD-MIRS/IJS/F-2,O-2-2001	Approved on 13 November 2015
Activity per unit mass	Reference material: building materials	Gamma ray spectrometer, balance	1.00E+01	1.00E+05	Bq kg-1	U-238	Matrix phosphogypsum, cylindrical geometry (diameter from 6 to 9 cm, height from 1 to 6 cm), density from 1 to 3 g cm ⁻³	10	%	2	~95%	Yes	Calibrated HPGe spectrometer, CRM (multigamma aqueous solution), set of standard weights	LNE-LNHB (Bq) MIRS (kg)	EUR-RAD-MIRS/IJS/F-2,O-2-2001	Approved on 13 November 2015
Activity per unit mass	Reference material: foods / flora	Gamma ray spectrometer, balance	2.00E+01	5.00E+04	Bq kg-1	K-40	Matrix bilberry, cylindrical geometry (diameter from 6 to 9 cm, height from 1 to 6 cm), density from 0,5 to 1 g cm ⁻³	7	%	2	~95%	Yes	Calibrated HPGe spectrometer, CRM (multigamma aqueous solution), set of standard weights	LNE-LNHB (Bq) MIRS (kg)	EUR-RAD-MIRS/IJS/F-2,O-2-2002	Approved on 13 November 2015

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Activity per unit mass	Reference material: foods / flora	Gamma ray spectrometer, balance	1.00E+00	1.00E+05	Bq kg-1	Cs-137	Matrix bilberry, cylindrical geometry (diameter from 6 to 9 cm, height from 1 to 6 cm), density from 0,5 to 1 g cm-3	7	%	2	-95%	Yes	Calibrated HPGe spectrometer, CRM (multigamma aqueous solution), set of standard weights	LNE-LNHB (Bq) MIRS (kg)	EUR-RAD-MIRS/IJS/F-2,O-2-2002	Approved on 13 November 2015