



[SECONDARY STANDARD DOSIMETRY LABORATORY]

Member of the IAEA/WHO SSDL NETWORK

Accredited by DAkkS

SSDL Calibration Service

- Accredited calibrations in terms of absorbed dose to water and air kerma according to ISO 17025:2005
- National [accreditation: DAkkS](#) - global recognition via the [ILAC MRA](#)
- [IAEA/WHO SSDL Network](#) membership
- Applicable to all recent dosimetry codes of practice
- Calibration of radiotherapy and diagnostic ionization chambers from all manufacturers

High energy X-Ray and electron beam qualities (see Appendix Accreditation Scope)

- Calibrations in terms of absorbed dose to water according to IAEA TRS-398
- Available beam qualities: photons 6, 10, and 15 MV and electrons 6 to 15 MeV

Co-60 quality (see Appendix Accreditation Scope)

- Calibrations in terms of absorbed dose to water (according to IAEA TRS-398, AAPM TG-51 and DIN 6800-2)
- Calibrations in terms of air kerma (according to IAEA TRS-277, AAPM TG-21)

X-ray – radiation therapy qualities (TH and TW - see Appendix Accreditation Scope)

- Calibrations in terms of absorbed dose to water (according to IAEA TRS-398, DIN 6809-4 and DIN 6809-5)
- Calibrations in terms of air kerma (according to IAEA TRS-277, AAPM TG-61)

X-ray – diagnostic radiology (RQR, RQA, RQT - see Appendix Accreditation Scope)

- Calibrations in terms of air kerma (according to IAEA TRS-457)
- Calibrations in terms of air kerma-area product (KAP) and air kerma-length product (KLP) according to IAEA TRS-457

Electrometer Calibration

- Accredited calibration in terms of DC according to ISO 17025:2005
- [National accreditation: DAkkS](#) - global recognition via the [ILAC MRA](#)



Factory Calibration

- Ionization chambers – calibration qualities (see Appendix Factory calibrations)
- IBA Dosimetry 1-D and 2-D devices (CA24, StarTrack, I'mRT MatriXX)

Note: SSDL vs. Factory calibration:

The SSDL accredited calibrations are performed with the highest precision achievable. It should be the choice for an ionization chamber used for clinical reference dosimetry (beam calibration etc.). A factory calibration is less costly, but the uncertainty of the calibration coefficient is higher. A chamber with factory calibration is perfectly usable for routine measurements.

Appendix

see following pages

IBA Dosimetry Secondary Standard Dosimetry Laboratory Accreditation Scope

Quantity	Measurement range	Measurement conditions		$U (k = 2)$
		Beam quality	Specification	SSDL
Air kerma rate	100 mGy/min to 5 Gy/min	Co-60	TRS-277, TG-21	1.0 %
	1 mGy/min to 200 mGy/min	X-rays 40 kV to 280 kV	IEC 61627	1.2 %
Air kerma	100 mGy to 20 Gy	Co-60	TRS-277, TG-21	1.0 %
	1 mGy to 10 Gy	X-rays 40 kV to 280 kV	IEC 61627	1.2 %
Kerma area product	20 pGy·m ² to 100 μGy·m ²	40 kV to 160 kV	IEC 61627	1.8 %
Kerma length product	0.1 μGy·m to 1 mGy·m	40 kV to 160 kV	IEC 61627	1.8 %
Absorbed dose rate to water	100 mGy/min to 5 Gy/min	Co-60	TRS-398, TG-51, DIN 6800-2	1.0 %
	1 mGy/min to 300 mGy/min	X-rays 120 kV to 280 kV	DIN6809-5	2.3 %
	5 mGy/min to 100 mGy/min	X-rays 20 kV to 100 kV	TRS-398, DIN 6809-4	3.2 %
Absorbed dose to water	1 Gy to 20 Gy	Electrons 6 MeV to 15 MeV	TRS-398	2.2 %
	1 Gy to 20 Gy	High energy X-rays 6 MV to 15 MV	TRS-398	1.6 %
	0.1 Gy to 20 Gy	Co-60	TRS-398, TG-51, DIN 6800-2	1.0 %
	1 mGy to 5 Gy	X-rays 120 kV to 280 kV	DIN 6809-5	2.3 %
	5 mGy to 3 Gy	X-rays 20 kV to 100 kV	TRS-398, DIN 6809-4	3.5 %
DC current	200 pA to 10 μA			0.2 %
	20 pA to 199 pA			0.3 %
	1 pA to 19.9 pA			0.5 %

IBA Dosimetry Dosimetry Laboratory Factory calibrations

Quantity	Measurement range	Measurement conditions		$U(k=2)$
		Beam quality	Specification	Factory
Air kerma rate	100 mGy/min to 5 Gy/min	Co-60	TRS-277, TG-21	2.2 %
	1 mGy/min to 200 mGy/min	X-rays 40 kV to 280 kV	IEC 61627	2.3 %
Air kerma	100 mGy to 20 Gy	Co-60	TRS-277, TG-21	2.2 %
	1 mGy to 10 Gy	X-rays 40 kV to 280 kV	IEC 61627	2.3 %
Kerma area product	20 pGy·m ² to 100 μGy·m ²	40 kV to 160 kV	IEC 61627	3.3 %
Kerma length product	0.1 μGy·m to 1 mGy·m	40 kV to 160 kV	IEC 61627	3.3 %
Absorbed dose rate to water	100 mGy/min to 5 Gy/min	Co-60	TRS-398, TG-51, DIN 6800-2	2.2 %
	1 mGy/min to 300 mGy/min	X-rays 120 kV to 280 kV	DIN6809-5	3.5 %
	5 mGy/min to 100 mGy/min	X-rays 20 kV to 100 kV	TRS-398, DIN 6809-4	4.0 %
Absorbed dose to water	0.1 Gy to 20 Gy	Co-60	TRS-398, TG-51, DIN 6800-2	2.2 %
	1 mGy to 5 Gy	X-rays 120 kV to 280 kV	DIN 6809-5	3.5 %
	5 mGy to 3 Gy	X-rays 20 kV to 100 kV	TRS-398, DIN 6809-4	4.0 %