



Accreditation Scope

**Federal Authority for Nuclear Regulation – Secondary Standards
Dosimetry Laboratory, NAL 131
Calibration Laboratory, (ISO/IEC 17025:2017)**

Al Zafranah, Abu Dhabi, UAE

Issue Date: 06-12-2022

Expiry Date: 05-12-2025

Issue No: 08

| Calibration Field/ Quantity/ Property | Measurand / Equipment | Measuring Range | CMC (k=2) | Calibration Method (Standard/ Internal Procedure) | Permanent lab (P) / Client-site (S) |
|---------------------------------------|--|-------------------------------|-----------|--|-------------------------------------|
| Ionizing Radiation | Air Kerma Rate / Dosimeter | (5.00 E-03 – 1.50 E+01) mGy/h | 1.5 % | ISO 4037-1:2019 /3:2019 with Cs-137 source and Secondary standard ionization chamber | P |
| | Ambient Dose Equivalent Rate / Radioprotection Dosimeters | (2 – 40,000) µSv/h | 5.2 % | ISO 4037-1:2019 /3:2019 with Cs-137 source and Secondary standard ionization chamber | |
| | Personal Dose Equivalent Penetrating (in 10 mm depth) with angular dependence / Dosimeters | (10 to 10,000) µSv | 6.2 % | ISO 4037-1:2019/3:2019 with Cs-137 source, ISO water slab phantom and Secondary standard ionization chamber | |
| | Personal Dose Equivalent Penetrating (in 0.07 mm depth) with angular dependence / Dosimeters | (10 to 10,000) µSv | 6.2 % | ISO 4037-1:2019/3:2019 with Cs-137 source, ISO water slab and rod phantoms and Secondary standard ionization chamber | |
| | Electronic personal dose equivalent (in 10mm depth) / Dosimeters | (10 to 10,000) µSv | 4.9 % | ISO 4037-1:2019/3:2019 with Cs-137 source, ISO water slab phantom and Secondary standard ionization chamber | |
| | Electronic personal dose equivalent rate (in 10mm depth) / Dosimeters | (5 – 40,000) µSv/h | 4.9 % | ISO 4037-1:2019/3:2019 with Cs-137 source, ISO water slab phantom and Secondary standard ionization chamber | |
| | Ambient Dose Equivalent H*(10) (free in air) with angular dependence / Dosimeters | (10 to 10,000) µSv | 6.2 % | ISO 4037-1:2019/3:2019 with Cs-137 source, Secondary standard ionization chamber | |



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| Ionizing Radiation | Air Kerma Rate / Dosimeter | (7.2 E+01 – 1.5 E+04) mGy/h | 1.9 % | IEC 61267:2005, IAEA Technical Reports Series No. 457 – Dosimetry in Diagnostic Radiology: An International Code of Practice, X-Ray RQR Qualities, 50 kV to 150 kV and Secondary Standard ionization chamber | P |
| | Air Kerma Rate / Diagnostic Ionization chamber | (1.08 E+01 – 7.9 E+02) mGy/h | 1.9 % | IEC 61267:2005, IAEA Technical Reports Series No. 457 – Dosimetry in Diagnostic Radiology: An International Code of Practice, X-Ray RQA Qualities, 50 kV to 150 kV and Secondary Standard ionization chamber | |
| | Air Kerma Rate / Dosimeter | (3.6 E-01 – 2.3 E+01) mGy/h | 2.3 % | ISO 4037-1:2019 / 3:2019, X-ray N-Series, 40 kV to 300 kV with Secondary Standard ionization chamber | |
| | N40 - Ambient Dose Equivalent Rate / Radioprotection Dosimeters | (200 – 10,000) μ Sv/h | 6.6 % | ISO 4037-1:2019 / 3:2019, with X-ray N-40 and Secondary Standard ionization chamber | |
| | N60 - Ambient Dose Equivalent Rate / Radioprotection Dosimeters | (200 – 10,000) μ Sv/h | 8.7 % | ISO 4037-1:2019 / 3:2019, with X-ray N-60 and Secondary Standard ionization chamber | |
| | N80 - Ambient Dose Equivalent Rate / Radioprotection Dosimeters | (200 – 10,000) μ Sv/h | 6.9 % | ISO 4037-1:2019 / 3:2019, with X-ray N-80 and Secondary Standard ionization chamber | |
| | N100 - Ambient Dose Equivalent Rate / Radioprotection Dosimeters | (200 – 10,000) μ Sv/h | 6.8 % | ISO 4037-1:2019 / 3:2019, with X-ray N-100 and Secondary Standard ionization chamber | |



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| Ionizing Radiation | N120 - Ambient Dose Equivalent Rate / Radioprotection Dosimeters | (200 – 10,000) μ Sv/h | 7.7 % | ISO 4037-1:2019 / 3:2019, with X-ray N-120 and Secondary Standard ionization chamber | P |
| | N150 & N200 - Ambient Dose Equivalent Rate / Radioprotection Dosimeters | (200 – 10,000) μ Sv/h | 7.1 % | ISO 4037-1:2019 / 3:2019, with X-ray N-150, N200 and Secondary Standard ionization chamber | |
| | N250 - Ambient Dose Equivalent Rate / Radioprotection Dosimeters | (200 – 10,000) μ Sv/h | 5.3 % | ISO 4037-1:2019 / 3:2019, with X-ray N-250 and Secondary Standard ionization chamber | |
| | N300 - Ambient Dose Equivalent Rate / Radioprotection Dosimeters | (200 – 10,000) μ Sv/h | 7.7 % | ISO 4037-1:2019 / 3:2019, with X-ray N-300 and Secondary Standard ionization chamber | |
| | Personal Dose Equivalent Penetrating (in 10 mm depth) / Dosimeters | (100 to 25,000) μ Sv | 6.1 % | ISO 4037-1:2019 / 3:2019, X-ray N-Series with Secondary Standard ionization chamber and ISO water slab phantom | |
| | Personal Dose Equivalent Penetrating (in 0.07 mm depth) / Dosimeters | (100 to 25,000) μ Sv | 6.1 % | ISO 4037-1:2019 / 3:2019, X-ray N-Series with Secondary Standard ionization chamber and ISO pillar, rod and slab phantoms | |



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| Ionizing Radiation | Electronic personal dose equivalent (in 10mm depth) / Dosimeters | (100 to 25,000) μ Sv | 4.8 % | ISO 4037-1:2019 / 3:2019, X-ray N-Series with Secondary Standard ionization chamber and ISO water slab phantom | P |
| | N40 - Electronic personal dose equivalent rate (in 10mm depth) / Dosimeters | (100 – 10,000) μ Sv/h | 6.9 % | ISO 4037-1:2019 / 3:2019, X-ray N-40 with Secondary Standard ionization chamber and ISO water slab phantom | |
| | N60 - Electronic personal dose equivalent rate (in 10mm depth) / Dosimeters | (100 – 10,000) μ Sv/h | 8.9 % | ISO 4037-1:2019 / 3:2019, X-ray N-60 with Secondary Standard ionization chamber and ISO water slab phantom | |
| | N80 - Electronic personal dose equivalent rate (in 10mm depth) / Dosimeters | (100 – 10,000) μ Sv/h | 7.2 % | ISO 4037-1:2019 / 3:2019, X-ray N-80 with Secondary Standard ionization chamber and ISO water slab phantom | |
| | N100 - Electronic personal dose equivalent rate (in 10mm depth) / Dosimeters | (100 – 10,000) μ Sv/h | 7.1 % | ISO 4037-1:2019 / 3:2019, X-ray N-100 with Secondary Standard ionization chamber and ISO water slab phantom | |
| | N120 - Electronic personal dose equivalent rate (in 10mm depth) / Dosimeters | (100 – 10,000) μ Sv/h | 8.0 % | ISO 4037-1:2019 / 3:2019, X-ray N-120 with Secondary Standard ionization chamber and ISO water slab phantom | |
| | N150 - Electronic personal dose equivalent rate (in 10mm depth) / Dosimeters | (100 – 10,000) μ Sv/h | 7.4 % | ISO 4037-1:2019 / 3:2019, X-ray N-150 with Secondary Standard ionization chamber and ISO water slab phantom | |



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| Ionizing Radiation | N200 - Electronic personal dose equivalent rate (in 10mm depth) / Dosimeters | (100 – 10,000) μ Sv/h | 7.4 % | ISO 4037-1:2019 / 3:2019, X-ray N-200 with Secondary Standard ionization chamber and ISO water slab phantom | P |
| | N250 - Electronic personal dose equivalent rate (in 10mm depth) / Dosimeters | (100 – 10,000) μ Sv/h | 5.6 % | ISO 4037-1:2019 / 3:2019, X-ray N-250 with Secondary Standard ionization chamber and ISO water slab phantom | |
| | N300 - Electronic personal dose equivalent rate (in 10mm depth) / Dosimeters | (100 – 10,000) μ Sv/h | 7.9 % | ISO 4037-1:2019 / 3:2019, X-ray N-300 with Secondary Standard ionization chamber and ISO water slab phantom | |
| | Ambient Dose Equivalent H*(10) (free in air) with angular dependence / Dosimeters | (100 to 25,000) μ Sv | 6.1% | ISO 4037-1:2019 / 3:2019, X-ray N-Series with Secondary Standard ionization chamber | |
| END | | | | | |