

# ISO 6980-3:2023-11 (E)

## Nuclear energy - Reference beta-particle radiation - Part 3: Calibration of area and personal dosimeters and the determination of their response as a function of beta radiation energy and angle of incidence

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	1
4	Symbols and abbreviated terms, and reference and standard test conditions .....	3
5	Procedures applicable to all area and personal dosimeters .....	4
5.1	General principles .....	4
5.1.1	Selection of sources and radiation qualities .....	4
5.1.2	Reference absorbed dose rate .....	4
5.1.3	Conversion coefficients .....	5
5.1.4	Reference conditions and standard test conditions .....	5
5.1.5	Variation of influence quantities .....	5
5.1.6	Point of test and reference point .....	6
5.1.7	Axes of rotation .....	6
5.1.8	Condition of the dosimeter to be calibrated .....	6
5.1.9	Influence of photon contribution .....	6
5.2	Determination of calibration and correction factors .....	6
5.2.1	Determination of the reference dose rate by a standard instrument .....	6
5.2.2	Determination of reference calibration factor and correction factor for non-linear response .....	7
5.2.3	Determination of the correction factor for beta-particle energy and angle of incidence, $k_E$ , .....	7
6	Procedures for area dosimeters .....	8
6.1	General principles .....	8
6.2	Quantity to be measured .....	8
7	Procedures for personal dosimeters .....	8
7.1	General principles .....	8
7.2	Quantity to be measured .....	8
7.3	Experimental conditions .....	8
7.3.1	Use of phantoms .....	8
7.3.2	Geometrical considerations in divergent beams .....	9
7.3.3	Simultaneous irradiation of several dosimeters .....	9
8	Uncertainties .....	10
9	Reporting of results according to ISO 17025 .....	10
Annex A (normative) Reference conditions and standard test conditions .....		11
Annex B (informative) Conversion coefficients for some beta reference radiation fields .....		13
Bibliography .....		19