

## SOFTWARE CONTROLLED DOSE CALIBRATOR

MEASUREMENT OF RADIOPHARMACEUTICALS  
FOR PET AND SPECT APPLICATIONS

- CALIBRATED FOR MORE THAN 30 NUCLIDES
- MEASUREMENT & COMPENSATION OF BACKGROUND
- SOFTWARE BASED



The PC-based Dose Calibrator is designed for the fast and accurate determination of the activity or volume activity of radiopharmaceuticals that are used in the nuclear medicine for diagnostics and therapy. The dose calibrator is calibrated for all common radionuclides, including the RSO nuclides ( $^{90}\text{Y}$ ,  $^{169}\text{Er}$ ,  $^{186}\text{Re}$ ) and the PET nuclides (e.g.  $^{18}\text{F}$ ,  $^{124}\text{I}$ ). The influencing factors for containers (e.g. syringe, eluate bottle, capsule) and contents are considered in the measurement.

The dose calibrator is CE marked as medical device class IIb according to the European legislation.

The reader can change the way you work and test. The system enables you to focus on your core processes and is the perfect long-term quality and user-friendliness device. The measuring chamber is connected with the PC system via USB interface and controlled with a user friendly interface.

The integrated menu for quality control consequently fulfils all requirements of DIN 6855-11 and the requirements of medical authorities (e.g. national institute for standards and metrology). The user's menu of the dose calibrator supports in performing the (partially daily) quality controls (background, responsiveness) and documents the results as an evidence. For background quality control, a measurement with and without sample holder are made after each other.

- Calibration factors for different containers, container sizes and contents (volumes) are taken into account to reduce the total error
- Activity measurement of all nuclides used for PET and SPECT production and application
- Activity calculation for freely definable application times
- Integrated quality control according to EN 61303 and DIN 6855-11 with data storage, protocol print and period schedule check
- <sup>99m</sup>Tc breakthrough check according to DIN 6854
- Integrated database with measuring value storage
- Integration in nuclide management and balancing systems

#### Technical Specifications

Radioisotope	<sup>99m</sup> Tc <sup>18</sup> F	40 kBq to 50/200* GBq (* 7% additional error) 60 kBq to 70/300* GBq
Measuring range setting		automatically, alternative: fixed measuring range adjustable e.g. for PET filling
Energy range for $\gamma$ -sources		25 keV to 3 MeV
Measurement time		with meas. range change-over 2s – 15s without meas. range change-over 1s – 3s
Basic error		< 5%
Linearity error		< 2%
Result display		4-digits including display of unit, nuclide and chemical compound
Stored isotope table		<sup>11</sup> C, <sup>13</sup> N, <sup>15</sup> O, <sup>18</sup> F, <sup>32</sup> P, <sup>51</sup> Cr, <sup>54</sup> Mn, <sup>57</sup> Co, <sup>58</sup> Co, <sup>59</sup> Fe, <sup>60</sup> Co, <sup>67</sup> Ga, <sup>68</sup> Ga, <sup>75</sup> Se, <sup>89</sup> Sr, <sup>90</sup> Y, <sup>99</sup> Mo, <sup>99m</sup> Tc, <sup>111</sup> In, <sup>113m</sup> In, <sup>123</sup> I, <sup>124</sup> I, <sup>125</sup> I, <sup>131</sup> I, <sup>133</sup> Xe, <sup>137</sup> Cs, <sup>140</sup> Ba, <sup>153</sup> Sm, <sup>169</sup> Er, <sup>169</sup> Yb, <sup>186</sup> Re, <sup>188</sup> Re, <sup>197</sup> Hg, <sup>201</sup> Tl, <sup>224</sup> Ra
Containers		Injector syringe 1, 2, 3, 5, 10, 20 ml
Ampoules		5 ml
Contents (sample quantity)		0.1 ml – 99.9 ml
Measurement chamber		chamber $\varnothing$ 125, well $\varnothing$ 47 mm
Dimensions		total height 320 mm, well depth 205 mm
Shielding		4 mm Pb basic shielding, additional shielding 20 or 50 mm

