



DOSE CALIBRATOR WITH IONIZATION CHAMBER ACTUSB

SPECIFICATIONS

This system consists of an ionization chamber that contains all the electronics (including the high voltage source), and a tablet with touchscreen and Windows 10 operating system, that may have a detachable keyboard (or not). Power is supplied by an external switching adapter for 100–240 V ac, that also charges the battery inside the tablet. The battery has several hours of autonomy and allows you to continue using the dose calibrator in case of electric power failure. The ionization chamber and the tablet are connected by a single USB cable, thus minimizing the possibilities of noise.

- **ACTIVITY RANGE:** 1 microCi to 3 Ci of 99mTc.
- **ACCURACY:** +/- 5 %, depending on the available certified calibration sources.
- **DETECTOR:** pressurized ionization chamber with argon, remote.
- **ENERGY RANGE:** gammas up to 1.3 MeV.
- **GEOMETRY CORRECTION:** not needed up to 50 ml.
- **ACTIVITY DISPLAY:** on screen, floating point, in mCi or GBq. Automatic scaling (auto-range) or preset ranges. Automatic reading averaging (as a function of activity) or manually preset (between 2 and 1000 readings).
- **ISOTOPE SELECTION:** on screen, from a list where user's favorites are at the beginning, in the order the user selected. More than 25 isotopes included from factory. Users may add as many as they want. Half lives can be entered in seconds, minutes, hours, days or years.
- **CALIBRATION:** automatic. You only need to measure a certified source, type its activity and press a screen button. Calibration constants may be listed and retyped if the isotope was erased by mistake, no need to get a certified source again.
- **BACKGROUND:** automatic subtraction. It resets to 0 when the system is turned on. You can put it in 0 manually at any time.
- **RESULTS PRINTING:** all measurements or only selected ones can be saved into a text file with programmable columns (isotope, activity, date and time, etc.) that you may print with Notepad or similar, or copy into a spreadsheet like Excel. Individual results may be also printed for labeling doses, including patient name, directly to a printer or as JPEG images. If Wi-Fi is available, saved measurements can also appear automatically in all the other devices connected to the same OneDrive account.

- **CONTINUOUS MONITORING:** on screen and (optionally) also printed to a text file, with programmable intervals during a preset time. An alarm level may be set (with sound and/or marked on the text). It allows both monitoring background (without a source) as testing stability.
- **INTEGRATING MEASUREMENT:** accumulated dose in a programmable time.
- **DIGITAL THERMOMETER:** temperature is continuously measured inside the ionization chamber and displayed on screen. Automatic recalibration is done when necessary.
- **STOCK MANAGEMENT MODULE:** it allows you to record available activity and volume for each isotope in the list. You may also distinguish sundry radiopharmaceuticals with the same isotope. It calculates volume to extract given the wanted activity, activity in a given volume, and remainder, taking decay into account.
- **SHIELDING:** 3 mm width lead interior lining. Optional for using also 18F and other positron emitters: 50 mm width Pb.
- **ADAPTER MAINS INPUT:** Voltage: 100-240 V AC. Frequency: 50/60 Hz. Current: 0.4 A max.
- **ADAPTER OUTPUT:** Voltage: 5 V DC. Current: 2 A max. (Tablet charging its battery and ACTusb running need about 1.3 A.)
- **TEMPERATURE:** 10 to 35°C (environment).
- **HUMIDITY:** 85%, non-condensing.
- **CONNECTORS:** USB (Type A) for the ionization chamber, and microUSB (Type B) for the external charger of the tablet. The chamber does not need any other connection.
- **TABLET SPECIFICATIONS:** Intel quad core processor. 2 GB RAM. 32 GB solid state drive. Micro SDHC/SDXC cards support. Wi-Fi 802.11 b/g/n + Bluetooth 3.0. Touchscreen: 8.9". Resolution: 1280 x 800. Battery: Li-polymer, 5600 mAh (autonomy: about 4 hours). QWERTY keyboard, detachable. Front and rear cameras. Internal mic and speakers, connection for external. Tablet specifications may change.
- The system can also run on laptops or PCs without touchscreen, even with older operating systems (like Windows XP, 7 or 8), though these may limit the ability of synchronizing with other devices in the cloud. Wi-Fi is required for tablet connectivity with other devices, not for using the dose calibrator.

- Manufactured according to Resolution 1030 of the National Commission of Atomic Energy (CNEA) of 07/12/1987.
- Calibrated with available certified sources of CNEA (99mTc, 131I, 67Ga).
- Optional calibration for 18F and other isotopes.
