

Radioactive Stability Check Devices



Radioactive stability check devices are recommended to check the constancy of your absolute dosimetry equipment. Moreover, they can be used to determine air density correction factors when using air vented ionization chambers.

Type CDC for cylindrical ionization chambers

The check device includes a shielded ^{90}Sr source. Various adapters are available to accommodate the full range of our cylindrical ionization chambers for absolute dosimetry. The holders have a unique mounting mechanism that facilitates accurate and reproducible positioning of the chamber with respect to the source. The CDC is optionally delivered with a precision thermometer to determine the temperature at the position of the ionization chamber.

Type CDP for parallel plate ionization chambers

The CDP consists of a ^{90}Sr shielded source in a protective container. Adapters for our parallel plate ionization chambers are available.

Automated air density correction and consideration of source decay in DOSE 1 electrometer

The initial activity of the ^{90}Sr source is approx. 30 MBq. The half-life of ^{90}Sr is 28.7 years. The check source library of the DOSE 1 reference class electrometer allows for an initial calibration of the check devices and storage of the data in the internal library. Upon subsequent constancy measurements, the DOSE 1 automatically corrects the measurement for the decay of the radionuclide.

The determined air density factor can be entered in the DOSE 1 and is automatically used for correcting the measurement.

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Technical specifications

Radioactive Stability Check Devices

| | CDC | CDP |
|---|---|---|
| Suitable chamber types: | cylindrical | parallel plate |
| Radionuclide: | ⁹⁰ Sr | ⁹⁰ Sr |
| Initial activity: | 30 MBq ± 10 % | 30 MBq ± 10 % |
| Halftime: | 28.7 years | 28.7 years |
| ISO classification: | C6X444 | C6X444 |
| Dose rate at 10 cm distance from the surface: (when top is closed) | < 1 µSv/h | < 1 µSv/h |
| Weight: | 5.5 kg | 6.7 kg |
| Dimensions: | 121 mm (L) x 89 mm (W) x 226 mm (H) | 104 mm (L) x 104 mm (W) x 124 mm (H) |
| Available adapters: | FC23-C, FC65-G, FC65-P, CC08, CC13, CC13-S, CC25 | PPC05, PPC40, NACP |

Thermometer for CDC

| | |
|----------------------|---|
| Type: | Aluminium encapsulated, mercury with a glass capillary |
| Temperature range: | -10 °C to +50 °C |
| Resolution: | 0.1 °C |
| Accuracy: | ± 0.3 °C |
| Time constant: | 95 sec. |
| Long term stability: | 15 years |

Note:

Please observe the local safety regulations regarding radiation protection and regarding use, transport, import, export and disposal. Technical data is subject to change without prior notice.

High precision Absolute Dosimetry.

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