

GR50 - Research Gamma Irradiator

Overview

The Model GR50 Research Gamma Irradiator is a self-contained irradiator designed specifically for research applications. It provides high doses in short times in exact and repeatable protocols, yet is simple to operate. The GR50, with its mid-sized exposure chamber, is a versatile irradiator well suited for a broad spectrum of research projects.

Exposure Chamber

The exposure chamber for the GR50 is 8 inches x 8 inches x 8 inches. This chamber is large enough for most research projects, yet still close enough to the source for high exposure rates. Motorized turntable rotates at 5 RPM to deliver uniform dose to the material being irradiated. A shielded door provides access to the exposure chamber.

Radioactive Sources

The sources are doubly encapsulated, hermetically sealed, special form sources. The source capsule is fabricated of stainless steel. A tungsten rod holds the source and is raised to the side of the exposure chamber during exposure. When it is lowered to the storage position by pneumatic cylinder, exposure rates in the exposure chamber are minimized. Dose uniformity is +/- 20%.

Shielding

Lead provides sufficient shielding to limit radiation levels to less than 0.5 mR/h at 12 inches from the surface of the shield. All lead is totally encased in steel. The door to the exposure chamber is stepped to eliminate radiation shine.

Control System

The control panel has a timer, an expose and return switch, and a keyed power switch. The operator interface is an LCD display and keypad with function keys. Time is entered via keypad and can range from 1 second to 250 hours. Preset and elapsed time are displayed. The turntable can be turned on or off. When the expose button is pressed, and all interlock circuits are satisfied, the source is raised to the exposed position via pneumatic cylinder and the turntable begins to rotate. A position sensor confirms source position. When the timer expires or the return button is pressed, the source returns to the storage position and the turntable stops rotating.

Specifications

Physical Size: 24 inches x 30 inches x 72 inches
Test Chamber Size: 8 inches x 8 inches x 8 inches
Weight: 3,800 lbs
Floor Loading: 640 Lbs/SqFt
Distance: Source to center of chamber: 5 inches

Accessories and Options

- Preprogrammed settings
- Turntables of different diameters can be provided to improve dose uniformity
- Jigs and fixtures are available for a variety of sample holders such as cell cultures and flasks.
- Cages for small animals are also available.



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Radioactive Sources	
Source (Cs-137)	Dose Rate R/hr
2200 Ci	33000
1200 Ci	18000
450 Ci	6600