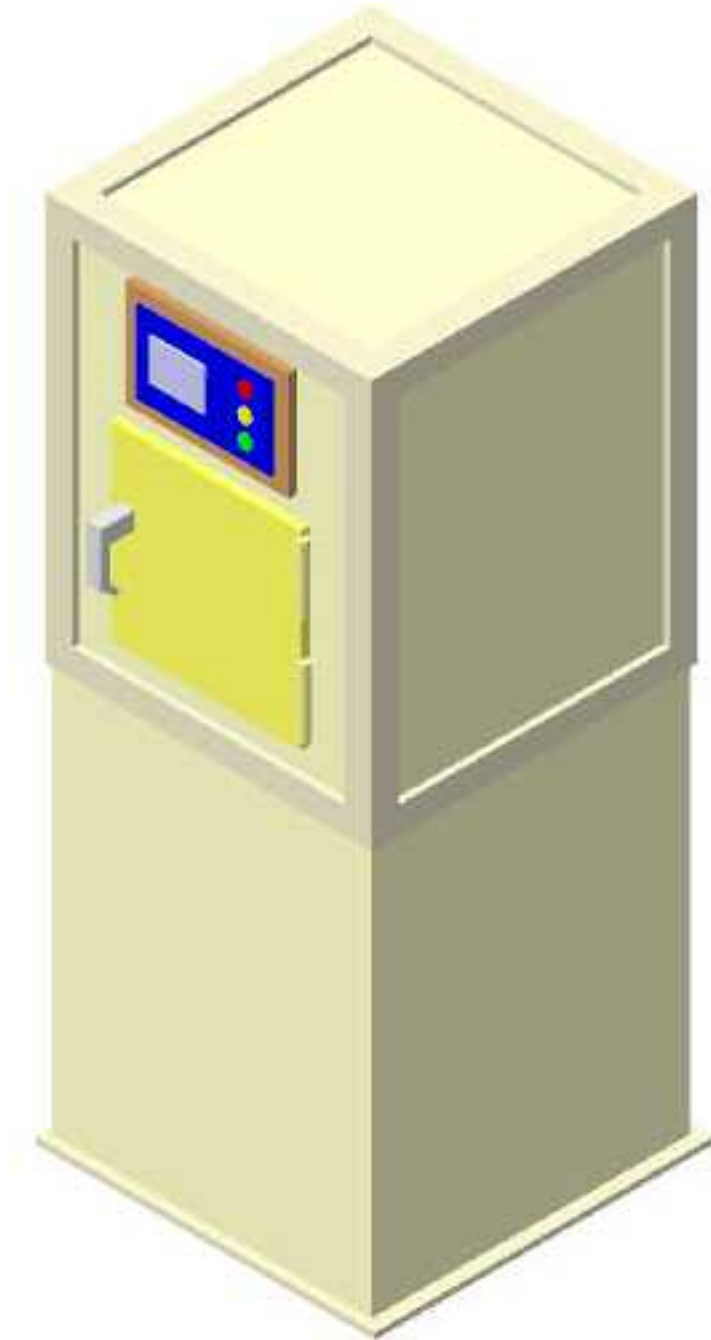

Hopewell Designs, Inc.

Model GR50 Gamma Irradiator



The Model GR50 Research Gamma Irradiator is a self-contained irradiator designed specifically for research. 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.

KEY FEATURES

- Suitable for a wide range of research projects
- Easy to use
- Fail safe design
- Safety interlock system

GR50 RESEARCH GAMMA IRRADIATOR

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EXPOSURE CHAMBER

The exposure chamber for the GR50 is 200mm x 200mm x 200mm. This chamber is large enough for most research projects, yet still close enough to the source for high exposure rates. A motorized turntable rotates at 10 RPM to deliver uniform dose to the material being irradiated. A shielded door provides access to the exposure chamber.

RADIOACTIVE SOURCES

A range of Cs-137 source strengths is available to provide different exposure rates.

Source & Size	Exposure Rate @ Center of Chamber cGy/min
2200 Ci	550
1200 Ci	300
450 Ci	110

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

Nominal lead thickness is 6 in. thick. Lead provides sufficient shielding to limit radiation level to $\leq 5 \mu\text{Sv/hr}$ (0.5 mR/h) at 30cm (12 in.) 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:

610mm wide x 760mm deep x 1830mm tall.
(24 in. x 30 in. x 72 in.)

Test Chamber Size:

200mm x 200mm x 200mm (8 in. x 8 in. x 8 in.)

Weight: 1,730 kg (3,800 lbs)

Floor Loading: 3,730 kg/m² (640 Lbs/SqFt)

Available Cs-137 Source Sizes: 450, 1200, 2200 Ci

Distance: Source to center of chamber: 130mm

Dose Rates (cGy/min): 550 for 2200 Ci

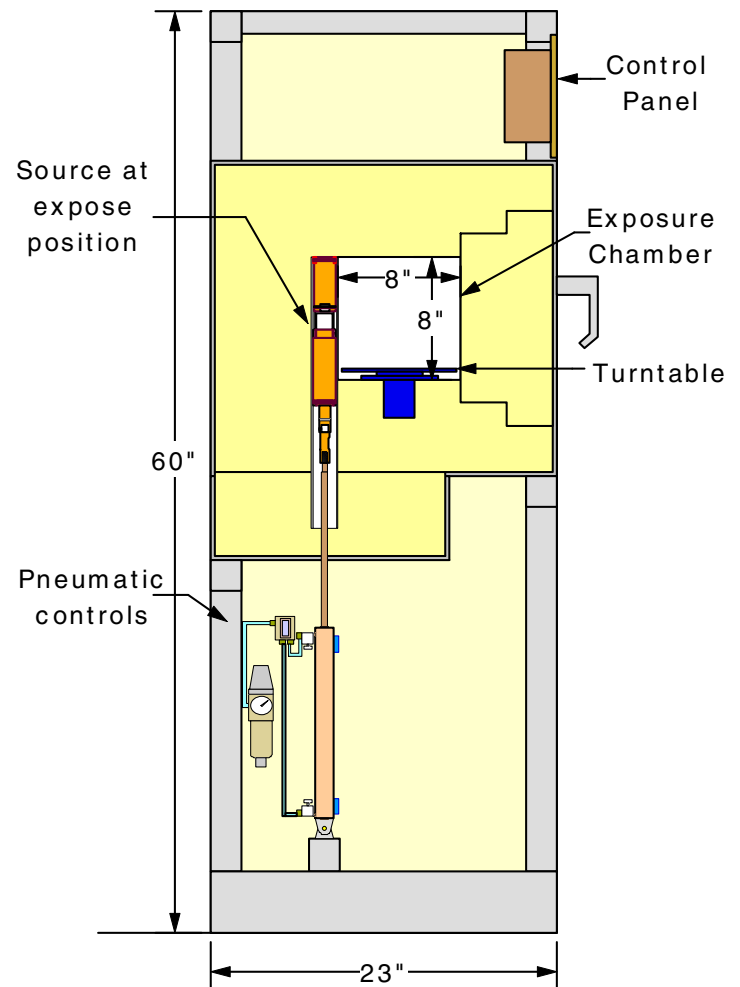
300 for 1200 Ci

110 for 450 Ci

ACCESSORIES

Jigs and Fixtures

Fixtures are available for a variety of sample holders such as cell cultures and flasks. Cages for small animals are also available.



Model GR50 Gamma Irradiator
Cross Section