Product Specifications

The Thermo Fisher Scientific EPD Auto Irradiator IRR-2 provides sensitive, automated calibration checking of EPDs Mk1 and/or Mk2.

EPD® IRR-2™

EPD® Auto Irradiator

- Multiple verification pathways:
  - Comparison with reference EPD
  - Comparison with previous measurements with the same EPDs
  - Checking against dose and EPD counters
- Compact, bench top unit
- No need for special shielded facility
- Accepts 10 EPDs in one load
- Operates automatically under software control
- Comprehensive safety features
  β and γ sources check all EPD counting channels simultaneously
- Interfaces with the EPD Maintenance Database, EMDS2

General

The Auto Irradiator is a complete package for periodic calibration checking of MK1 and/or MK2 EPDs. It operates under the control of a PC running the Auto Irradiator software supplied with the instrument. The IRR-2 is intended to operate in conjunction with the EPD Maintenance Database System (EMDS2), described in a separate data sheet.

A carousel holding up to 10 EPDs, either Mk1 or Mk2 but not mixed, is loaded onto the IRR-2. On starting the cycle, all dosemeters are status-checked before irradiation commences. On completion of each EPD irradiation the dose and counter data is uploaded to EMDS2 which can run on the same PC as the Auto Irradiator software. Here the data is compared with preprogrammed limits and any historical data in the database for individual EPDs.

EPD Auto Irradiator Specifications

Radiological

Radioactive Sources:	γ:	Am-241 3.7 GBq (100 mCi) Sealed source, special form
	β:	Cl-36 100 kBq (2.7 μCi) Sealed disc source
Irradiator Performance:	^{241}Am	60 keV Statistical accuracy better than ± 2% (2 min irradiation time) (15 °C - 25 °C (59 °F to 77 °F), 95% confidence level)
	^{36}Cl	714 keV b (Emax) Statistical and positional accuracy better than + 10% (2 min irradiation time)
External Radiation:		Radiation dose rate at 50 mm from any surface not greater than 1μSv/h (0.1 mrem/h) under normal operating conditions

Environmental

Operating Temperature:	+5 °C to 40 °C (41 °F to 104 °F)
Storage Temperature:	-25 °C to 70 °C (-13 °F to 158 °F)

Indicators

Indicator Lamps:	Power On (yellow), Lid Closed (red), Sources Shielded (green), Sources Exposed (red), Unlatch Lid Switch (green)

Mechanical

Size:	470 x 400 x 320 mm (19" x 16" x 13")
Weight:	37 kg (82 lbs)

Electrical & Safety

Supply Voltage:	110 V ± 10%, 47 to 63 Hz 240 V ± 10%, 47 to 63 Hz
Power:	300 W Maximum
Power Supply Interruption:	Unit will operate normally with a supply interruption of less than 50 ms. Interruption of more than 5 seconds causes irradiation cycle in progress to be terminated.
Fuses:	2A T, 20 x 5 mm (1" x 2") dia. @ 240 V 3A T, 20 x 5 mm (1" x 2") dia. @ 110 V
Power Connector:	IEC 320 (local IEC320 mains power cord required Outside UK)
Safety & EMC Specification:	Equipment for indoor use only. Complies with BS EN 61010-1 1993. Installation/over-voltage Category II, Pollution degree 1.

Computer Hardware Requirements

Note:	The IRR-2 requires a PC-compatible computer, which is not supplied as part of the IRR-2. A suitable PC can be supplied by Thermo Fisher Scientific if required and at extra cost.
Hardware Requirements:	IBM compatible Pentium PC, 166 MHz 32 MB RAM, 60 MB hard disk drive, CD-ROM drive, Vacant I/O card slot, Mouse, or other pointing device, Keyboard, 2 serial ports
Operating System:	Microsoft Windows™ or NT
IRR-2 Interface:	PCL 725 I/O card, or equivalent. (supplied with IRR-2)

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