

PSMEB

CLASS A



MICROBIOLOGICAL SAFETY CABINET FOR THE PREPARATION OF RADIOPHARMACEUTICALS

LOW & MEDIUM ENERGY



- **PSMEB 5-1200:** shielding with a lead equivalent of 5 mm and 1 200 mm length
- **PSMEB 10-1200:** shielding with a lead equivalent of 10 mm and 1 200 mm length
- **PSMEB 15-1200:** shielding with a lead equivalent of 15 mm and 1 200 mm length
- **PSMEB 25-1200:** shielding with a lead equivalent of 25 mm and 1 200 mm length

REGULATORY FRAMEWORK

The PSMEBs are type II microbiological safety cabinets designed and built to the performance requirements of European standard EN-12469 which means that 70 % of the air is recycled through the main HEPA H14 filter in the hood, and the remaining 30 % is extracted through a HEPA H14 exhaust filter (and active carbon filter as an option).

These laminar flow hoods are suitable for all pathogen handling operations.

Furthermore, the shielded microbiological safety cabinet was designed and developed **in compliance with the following international standards:** Machinery directive 2006/42, Electromagnetic Compatibility directives 2014/30/UE.

The **air quality** within the working environment is **classified as ISO 5 or class A** and is measured in accordance per the standard EN-14644.

ASSOCIATED PRODUCTS

- Scintidose dose calibrator
- Medi 405 dose calibrator
- Cont'Elu elution pots
- PFE/PME vial shields
- PDA support
- Positong handling tongs
- Easyview syringe shields

The PSMEB or shielded microbiological safety cabinet is equipped with a sliding protective screen made of lead glass suitable for performing: **radioisotope cell labelling**, **^{99m}Tc generator elutions**, kit reconstitution and **radiolabelling**, in particular with the following radioisotopes: ^{99m}Tc , ^{201}Tl , ^{111}In , ^{123}I . This **radiation protected laminar flow hood** also allows for the fractionating of patient doses of **SPECT** radiopharmaceuticals used in **nuclear medicine** in an **ISO 5 (class A)** working environment.

Radiation protection is provided by different thicknesses of lead shielding, depending on the PSMEB model selected (ranging

from 5 to 25 mm). To guarantee uniform whole -body protection for the user, the PSMEB features a mobile lead glass window, 30 to 80 mm thick, depending on the model selected, which can be displaced easily to adapt to the users needs.

The PSMEB offers **unrivalled ergonomics**, as the operator is free to **choose the most comfortable working position** (standing or sitting), made possible by the space available under the work surface.

FOCUS

The 316L stainless steel **work surface** allows the installation of the equipment necessary for cell labelling, generator elutions, and radiolabelling, such as an agitator, water heater, etc.

The neon-lit work area is secured by an **electrically operated sliding front window** in laminated glass.

The PSMEB control and the continuous digital display of the operating parameters are ensured by a dedicated microprocessor. The PSMEB is also equipped with a **germicidal UV** tube with adjustable time delay mounted on a magnetic base. An expandable window seal is provided on the front panel in case of fumigation.

The 30, 40, 55 or 80 mm thick **lead glass sliding screen** is removable and retractable. It is mounted on a ball bearing track, which allows for effortless movement.

The optional 50 mm lead shielded **generator compartment, with a lockable door** for improved security, is equipped with **two independent lifts** compatible with all $^{99}\text{Mo}/^{99m}\text{Tc}$ generators and allows for the simultaneous use of two generators for daily elutions.

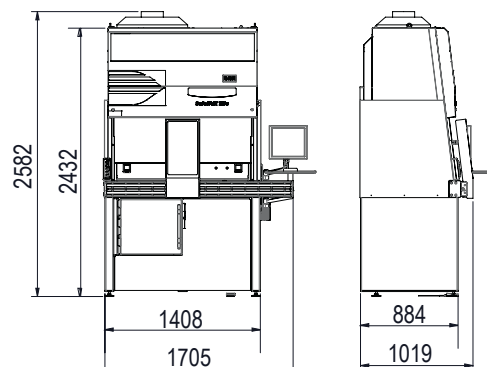
The 15 or 25 mm shielded **dose calibrator compartment**, depending on the model, is also available as an option and allows to install the Scintidose measuring device distributed by the Lemer Pax & Medisystem group. The exposure of the hands and fingers is considerably reduced thanks to the "Posilift", an innovative system of automatic raising and lowering of the dose calibrator sample dipper (optional).

The optional 15 or 25 mm lead shielded **waste compartment**, depending on the model, can accommodate a 165 mm diameter and 220 mm high container. Removal is performed from the inside of the workspace to ensure full-body radiation protection and has two openings: total and partial with a magnetic system (on request), the latter allowing the radiation cone to be limited to the strict minimum.



1 | 1 waste bin **2** | 2 independent accesses for each generator **3** | 1 access for the dose calibrator **4** | 2 socket emplacements (electrical, USB, RJ45)
5 | 1 shielded lockable compartment for 2 generators, equipped with 2 loading trays and 2 independent lifts **6** | Access to the waste compartment
7 | Sliding, removable and retractable lead glass screen **8** | Posilift system (raising and lowering of the dose calibrator dipper by foot control)

EFFECTIVE DIMENSIONS (mm)



OPTIONS

POSILIFT	automatic and pneumatic system for raising and lowering the sample dipper of the Scintidose dose calibrator using the foot control
ACTIVE CARBON FILTER	characteristics as required
DRY CONTACT	to send information on the machine's operating status

CHARACTERISTICS

LOW & MEDIUM ENERGY

General

Overall dimensions*:

L 1 705 x D 1 019 x H 2 582 mm

Hood weight:

All options Empty

PSMEB 5-1200 model: 1 900 kg 900 kg

PSMEB 10-1200 model: 2 000 kg 1 050 kg

PSMEB 15-1200 model: 2 300 kg 1 450 kg

PSMEB 25-1200 model: 2 750 kg 1 750 kg

Exterior finish:

Painted steel white RAL 9010

Interior finish:

316L brushed stainless steel

Lead glass viewing window:

1 sliding window (density 4.36)

Effective dimensions of window PSMEB 5-

1200 model: L 270 x H 489 x Th. 30 mm

Effective dimensions of window PSMEB 10-

1200 model: L 270 x H 489 x Th. 40 mm

Effective dimensions of window PSMEB 15-

1200 model: L 270 x H 489 x Th. 55 mm

Effective dimensions of window PSMEB 25-

1200 model: L 270 x H 489 x Th. 80 mm

Optional equipment:

- 1 shielded compartment - 2 generators
- 1 shielded compartment - dose calibrator
- 1 shielded compartment - 1 waste container

Type of lighting:

Neon

Brightness:

> 1 000 Lux

Germicidal UV:

1 magnetic UVC bulb 15W

Noise level:

< 54 dB(A)

Shielding thickness:

5/10/15/25 mm lead depending on the model

Work surface

Dim. : L 1 198 x D 610 x H 740 mm

Effective dimensions: L 1 198 x D 580 x H 740 mm

Work surface height: 1 010 mm

Work surface finish: 316L stainless steel

Shielding thickness: 5/10/15/25 mm lead depending on the model

Generator compartment (optional)

Internal dimensions of the generator compartment: L 369 x D 390 x H 410 mm

Effective dimensions for each generator:

L 180 x D 350 x H 364 mm

Security and closing of the compartment: lockable door

Shielding thickness: 50 mm of lead

Number of generators: 2

Generator models: Tekcis®, Ultra TechneKow™ (other upon request)

Dose calibrator compartment (optional)

Effective dimensions of the dose calibrator compartment: Ø220 x H 460 mm

Shielding thickness:

- 15 mm lead (PSMEB 5-1200/ PSMEB 10-1200/PSMEB 15-1200)
- 25 mm lead (PSMEB 25-1200)

Dose calibrator brand: Lemer Pax

Waste compartment (optional)

Effective dimensions of the bin compartment: Ø165x H 220 mm

Number of bins: 1

Shielding thickness:

- 15 mm lead (PSMEB 5-1200/ PSMEB 10-1200/PSMEB 15-1200)
- 25 mm lead (PSMEB 25-1200)

Removal of the waste container: from inside the hood on the work surface

Other options

Posilift : automatic and pneumatic system dedicated to the Lemer Pax Scintidose dose calibrator

Active carbon filter: several models available

Dry contact: information on the machines status

Aeraulic

Exhaust air flow rate: 500 m³/h

Work surface air quality: Class A

Generator compartment air quality: Class C

Electrical

Supply voltage: 250 V / 50 Hz

Maximum power consumption: 1 370 W

Interior power sockets: 2 power sockets (230 V, 50 Hz, 4 A)

Installation requirements

Floor load: between 1,600 and 2,240 kg/m² depending on model

Door passage width: > 90 cm

Diameter / Flowrate required for air extraction from the enclosure:

200 mm / 500 m³/h

Compressed air (service or compressor): 6 bar, 20 L/min (if Posilift option)

Package

Delivered disassembled, at least 3 packages

Package dimensions: Contact us

Package weight (product without options):

PSMEB 5-1200: 2 150 kg

PSMEB 10-1200: 2 250 kg

PSMEB 15-1200: 2 550 kg

PSMEB 25-1200: 3 000 kg

Ref.: 00033544 / 00012997 / 00025884 / contact us

Radiation protection

Maximum radioactivity that can be handled to obtain a dose rate less than 25 µSv/h at 5 cm from the walls**

Radionuclides	Maximum radioactivity that can be handled		
	with 15 mm shielding	with 10 mm shielding	with 5 mm shielding
^{99m} Tc	7,01.109 TBq	7,56.104 TBq	0,659 TBq
¹¹¹ In	0,129 TBq	2,81 GBq	60,7 MBq
²⁰¹ Tl	1,04.109 TBq	15 500 TBq	0,23 TBq
¹⁷⁷ Lu	0,19 TBq	23,3 GBq	1,29 GBq
¹²³ I	307 MBq	132 MBq	56,2 MBq

Calculation conditions: exposed sources in contact with the inner wall of the mobile shield of the PSMEB

* The dimensions must be confirmed by a layout drawing

**Regulations in ASN Guide No.32 "In vivo nuclear medicine facilities: minimum technical rules for design, operation and maintenance"