



SHIELDED LAMINAR FLOW CABINET

For Tc-Generators.

(Or other types of generators that has to be lifted)



Our starting points are always:

- Quality Safety Cabinets acc. EN 2469, Radiation protection 2020 – Guideline 96/29 and 97/43 Euratom and the GMP guidelines conform Radiopharmaceutical procedures.
- Customer request
- The common use of radioactive products like:
 - * Mo 99M Tc
 - * FDG
 - * Gallium
- Good Manufacturing Process.
 1. The European harmonized standards: **EN 12469, CEN EN 475; CEN EN 1281-CENELEC EN 60601-1 und 60601-1-1**: CEN EN 46001 and 46002 (CEN = European Norm Institute) PIC'S 2014
 2. Acc the standard: DIN 12950, till part 10 (for Microbiological and Biotechnical work, demands and certifications.)

Biological safety Cabinet Class II

To be delivered in wide LF.MRF.B 1300 / LF-MRF-B1600 / LFMRF B 1900

DIMENSIONS:

Dim. Inside working area chamber: see brochure

Outside dim: see brochure by 10 mm Pb lead shielding

Material: - *complete inside stainless steel, AISI 316 we are the only producer that supplies 316 standard. The reason is that in future you may be like to work with high toxic products like Gallium and then the surface from AISI 304 is NOT rust free enough!!*

Standard: - outside Cabinet powder coating RAL 9010 Frame: stainless steel
- glass window, arranged to slide vertically by electric switch
- alarm system for air-mistakes inside working area
- see technical information

- guaranteed current of air over the whole working area
- a guaranteed depression up to the pressure-chamber caused by exhaust- and inlet-filter
- by building in an extra stainless air-gauze, an absolute equal air-flow is guaranteed. There will be no "foreign air-turbans"
- Main- (HEPA) and exhaust-filters will be choked equally. Aerosols, caused by the eluting will be sucked off immediately

In case of normal B-lab. use renewing of the filters has to take place after min. 4- 5 years.

- Class A Cabinet has a 10 degree angle front
- it is a recirculation-cabinet: 70% of the air circulates and 30% outlet resp. inlet
- Lead shielding on right-, left-, underside between **5 – 50 mm** up till



- the filter high.(approx. 1000mm) bottom side/working area **5 - 50mm**
Building in of a 2 litre waste-container, shielded with **5- 50mm** lead material: stainless steel.

Remark: Our waste can has to be taken out from the working side. This by GMP reasons.

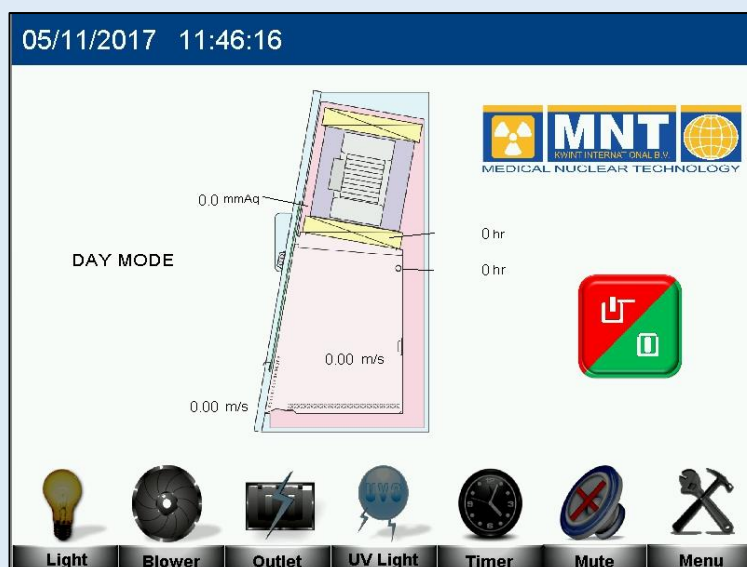
- Building-in and mounting of a dose calibrator incl. ionisation-chamber. (see separate documentation) lead shielding of ionisation chamber is **5 - 50mm** incl. Calibrator.
- On the left side is a stainless steel drawer built in for the storing of 2 x Tc-Generator. Every Generators can go up and down separately from each other. Lead drawer has all **Around 50mm lead shielding**. All Tc-generators now on the European market, fits in.

*Remark:
We work with electric actuators, so no need for any pneumatic assistance at all!*

We don't work with a front door, like our competitors, because acc. "the regulations" you need a complete closed stainless steel basket/environment, so in case of fire the Tc-Generators stay in there safe position and the lead will not floating away



- 1 x Moveable lead glass 350mm x 500mm (5 -50 mm Pb equivalent, 140 - 511 keV).
- 1 x panel mounted on backside of working area with 3 electrical sockets with water protection, 2 x USB and 1 x RS 45 connection
- 100% under pressure warning system 24/7



Touchscreen (frontside panel of the cabinet) does not only show all commands like any filter obstruction, speed limits, technical problems, lifting Tc-generators, but can also be supplied in many languages.



Cabinet can be supplied in many different solutions but quite a standard one is on the left side housing for 2 Tc-Generators, in the middle a built in dose calibrator with monitor on the back, a 2 litre needle waste basket, and on the right side wall a unit to be connected with 2 x 60 litre waste separation unit

OPTION 1.1 Upgrading lead thickness for FDG or Gallium

We can supply you in any situation extra lead thickness, but maybe it would be wise to think over.....

If you think that the cabinet must have a thicker lead shielding (30-50mm thickness) in the future by working with isotopes like FDG or Gallium, but at the moment the budget is not allowing, you can also order a bigger frame. Suppose you work now only with Tc-99M and you need a shielding of 5mm Pb around the cabinet. But in 3-5 years it is quite good possible that you get a PET Camera. Then you need a 30mm lead shielding around your cabinet. If you would order directly with your 5mm a bigger frame, you don't have to change the cabinet, you only dismantle it – move it to the front and place the 30mm lead strokes in. (Done within a day. Cost are labour and lead only.....!)



Most sold working example: left side pharmacy cabinet for placing disposables/printer etc.. The workspace in the middle for 2 Tc-Generators, 1 x ionisation chamber and 1 x waste bin and on the right side even the big 2 x 60 litres waste containers.

Option 1.2 Pharmacy cabinet

These furniture cabinets are specially made to place in all syringes boxes and all digital equipment, (Computer, printer, disposables etc.....)



Option 1.3 Waste separation.

This cabinet is standing next to the cabinet. Material partly steel powder coated. The higher part is a Standard cupboard and the lower part is completely surrounded with **5- 30mm lead** shielding. Inside there is place for 2 x 60 litre containers for plastics & non plastics or glass & non glass products waste. You can separate the waste directly from the working area inside the cabinet to the waste system. It is also possible that you place 4 x 30 litre containers instead of 2 x 60 lit. The containers are standing on a sliding screen. Inside material complete stainless steel.



Option 1.4 Dose calibrator Isomed 2010

consisting of:

- mini-PC-system (or micro-tower)
- Windows-software licence
- dose calibrator-software ISOMED 2010 with special quality check acc. to DIN
- integrated database with measuring value storage
- Measuring chamber, complete well-type ionization chamber with 4 mm lead shielding, incl. electrometer amplifier, type 638200
- sample holder / vial and syringe dipper
- Operation manual Supplied with English software and product documentation
- Cable length from chamber to device: 2.5 meters
- Display 19" monitor build in on the back side of the cabinet (working area)

Option 1.4.1 Test source Cs-137 5MBq with storage box

Please note that a test source is necessary for periodical quality check according to EN 61303.

Only a Cs-137 test source can be used (5 MBq).

If you already have such a source, MED is pleased to help by entering the test source data into the system (e.g. by phone, e-mail or team viewer).

We can only supply if the user has to confirm that he has a handling and stock licence!

Option 1.4.2 Numeric keyboard with integrated touch-pad, for operation inside box complete closed keyboard. (GMP) and is for every type of glove, workable.



- rechargeable
- no cables inside cabinet
- complete flat, 10mm thick

Option 1.4.3. Printer für Isomed

Type Label printer Seiko SLP 440 or equivalent, incl. 10 rolls of paper

For more info please look at separate brochure