



DETECTORS

MAC

Portable Cryostats



FEATURES

- Operation in any orientation
- Lightweight aluminum construction
- Slimline detector/preamplifier configuration
- Long holding time
- Warm-up sensor-bias disable

DESCRIPTION

For applications requiring both portability and flexibility of use, the MAC (multi-attitude cryostat) is the answer. The unique fill and vent system employed by the MAC cryostat allows operation of the detector in any orientation without LN₂ spillage even when the Dewar is full. The small size, lightweight, and ruggedness of the unit permit use of the unit in field conditions. The slimline detector chamber allows the unit to be shielded very effectively for use in low level counting applications.

The MAC detector consists of a Dewar having two fill and vent ports arranged so that one of the ports is the vent, regardless of the Dewar's orientation. This allows the Dewar to be operated in the horizontal position, vertically uplooking, or vertically downlooking, without loss of LN₂.

A single port version of the MAC and Big MAC cryostat is available on special order. This version has half the capacity and holding time of the standard product. A gravity-feed supply Dewar/stand is available for the single port cryostat. The single port cryostat is compatible with other brands, and it holds LN₂ in all orientations which may be important in some applications, e.g. for use in a submarine (see Mirion Model 7411).

The detector/preamp includes a sensor which provides a signal when the LN₂ is depleted. This output can be used to shut down the bias supply, to operate an alarm, or both.

The standard MAC unit features the Mirion Slimline™ Cryostat option in which a Mirion preamplifier is packaged behind the detector chamber within the confines of the 80 mm diameter snout. The Slimline cryostat allows the detector to be installed in a shield with very little difficulty and with efficient use of shielding material. The snout is long enough to reach through 10-15 cm of shielding material and still accommodate Marinelli beaker samples.

A flanged version of the MAC cryostat is also available. This version makes use of a conventional box style preamplifier having bulkhead connectors (rather than pigtail connectors) and is somewhat more compact than the Slimline version.

The MAC unit comes with detachable carrying handle assembly. With the carrying handle assembly removed, there are no obstructions beyond the outer diameter of the Dewar, and the unit can be readily installed in other scientific apparatus such as whole-body counters, scattering chambers or low-level counting systems.

MAC-Two Day Big MAC-Five Day | PORTABLE CRYOSTATS

Both manual and automatic refill systems are available for use with the MAC. Since the MAC has separate fill and vent ports, the LN₂ supply and the vent lines can be made gas tight, thus avoiding the hazards of cold N₂ or LN₂ to either personnel or adjacent equipment.

The MAC cryostat is available as an option with most of the High Purity Germanium detectors offered by Mirion. Consult the Mirion website for information on the wide variety of detectors that are available from Mirion.

SPECIFICATIONS

MAC

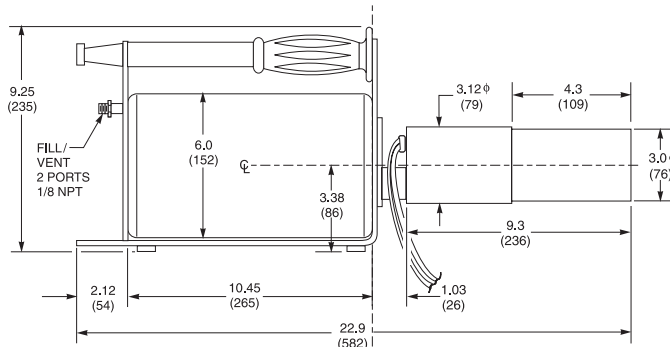
- Weight: 5.1 kg (11.2 lb) empty; 7.1 kg (15.6 lb) full
- LN₂ Capacity: 2.5 liters
- Holding Time: 2 days (typical detector size)
- Cool Down Time: 2 hours, typically
- Fill and Vent Ports: 3.2 mm (1/8 in.) NPT

BIG MAC

- Weight: 7.9 kg (17.5 lb) empty; 13.6 kg (30 lb) full
- LN₂ Capacity: 7.0 liters
- Holding Time: 5 days (typical detector size)
- Cool Down Time: 2 hours, typically
- Fill and Vent Ports: 3.2 mm (1/8 in.) NPT

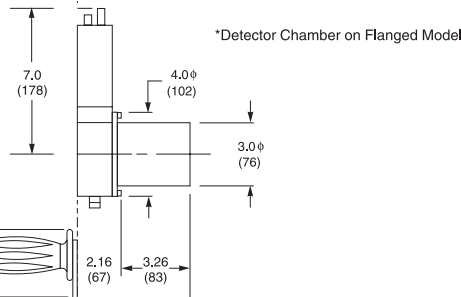
OPTIONS

- Model 7415 Detector Lift Mechanism (for Mirion shields)

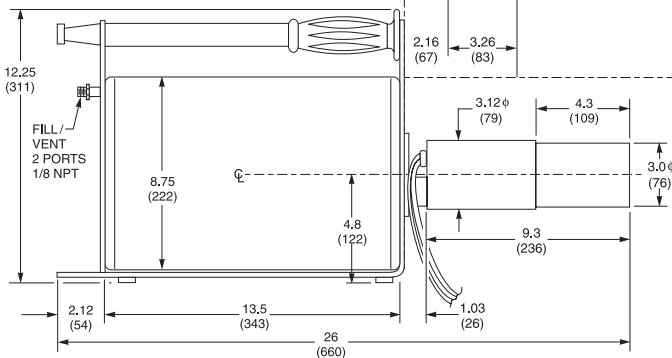


Model 7935SL-2 (Slimline Model)
Model 7935-2F (Flanged Model)*

End cap dimensions depend on detector size. The chart (below right) shows the typical efficiency range vs. end-cap diameter. End cap lengths are also greater for larger detectors. Consult the factory if end-cap size is critical in your application.



Rel. Efficiency (%)	Diameter in. (mm)
≤40	3.0 (76)
40-50	3.25 (83)
50-70	3.50 (89)
70-100	3.75 (95)
≥100	4.0 (102)



Model 7935SL-7 (Slimline Model)
Model 7935-7F (Flanged Model)*

