



DETECTORS

Flanged™ Cryostats

Liquid Nitrogen Cryostat

DESCRIPTION

The liquid nitrogen cryostat is the most important and least appreciated component in assuring reliable long term performance of a germanium detector system. Mirion manufactures its own cryostats to exacting quality standards to ensure long detector life.

There are two basic types of cryostats in use: the dipstick, in which the detector occupies a vacuum chamber having a dipstick-like tail which is inserted into the neck tube of a Dewar, and the integral, in which the detector chamber and Dewar share a common vacuum.

The standard configuration comes with a radial O-ring seal. A metal face seal is available as an option on detectors with a 3.0 in. (76 mm) diameter endcaps only. Metal seals are more rugged and, in general, provide a longer life time of the detector vacuum.

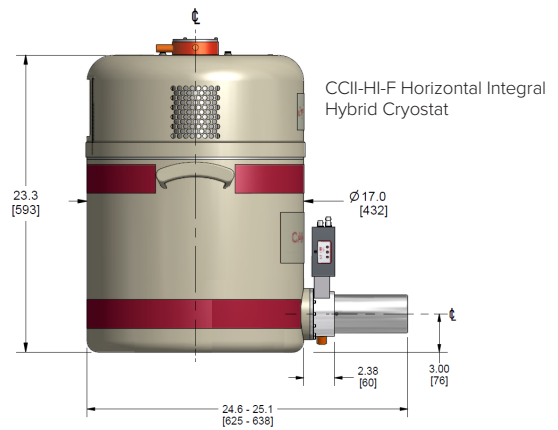
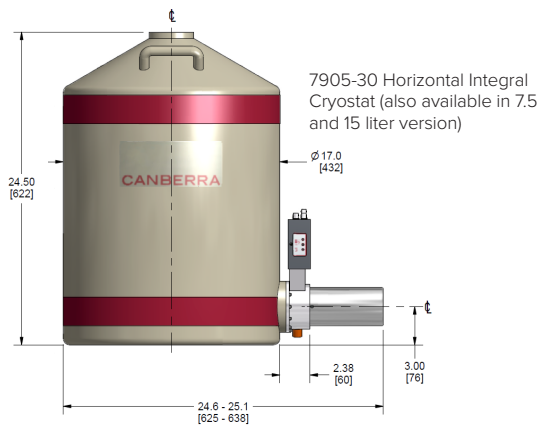
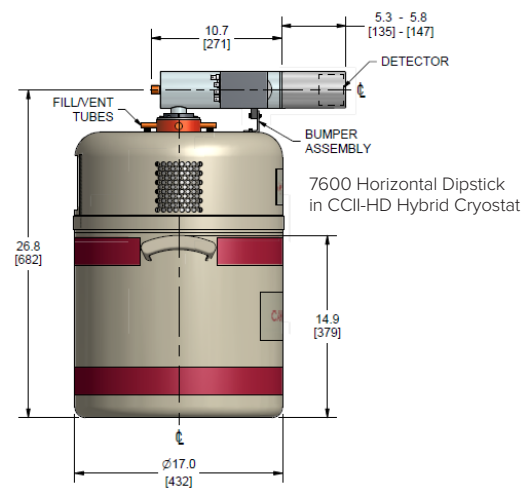
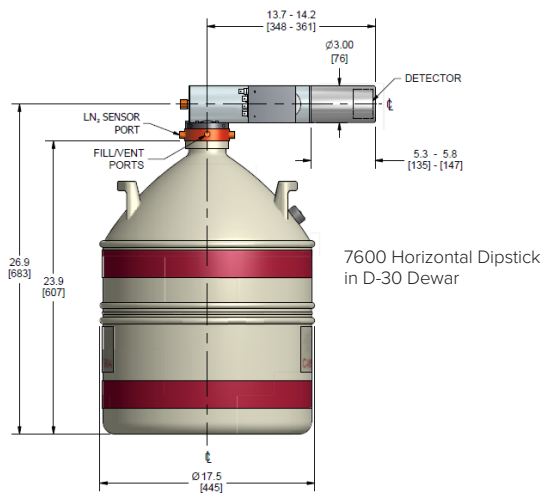
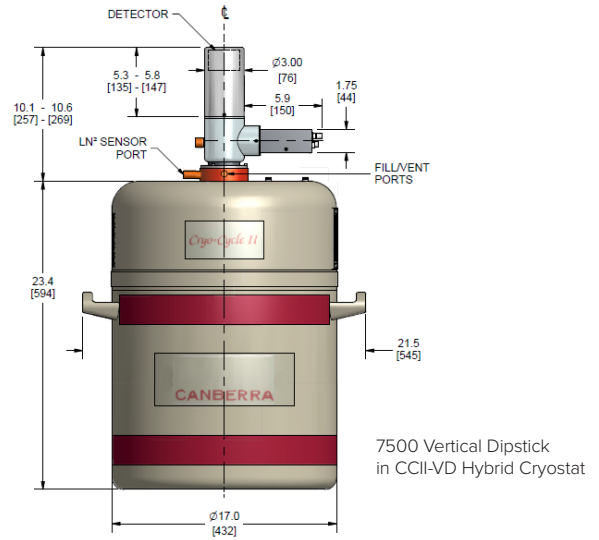
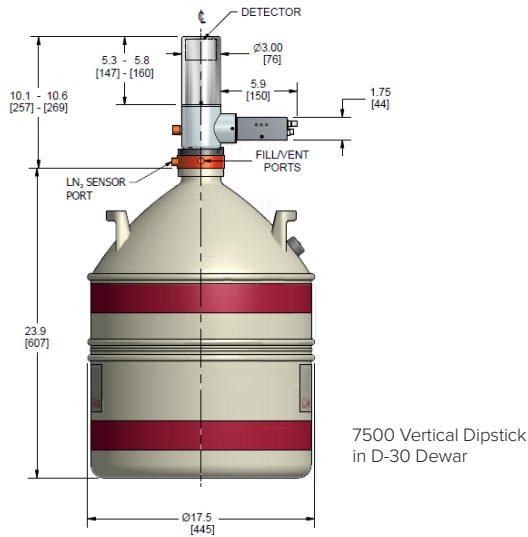
Flanged cryostats can be fitted with a Remote-Detector Chamber (RDC). This RDC option separates the detector chamber from the Dewar and preamplifier and allows the use of a backshield so lead shielding that completely surrounds the detector element can be installed.

This significantly reduces the radiation background on the detector. Standard lengths for the RDC option are 2, 4, 6, 8 and 10 inches. Custom lengths are available on request.

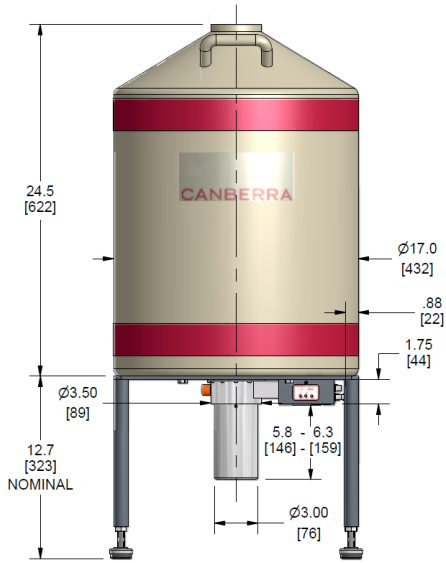
End cap dimensions depend on detector size. The chart below shows the typical efficiency range vs. end-cap diameter. End cap lengths are also greater for larger detectors. Consult the factory if end-cap size is critical in your application.

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)

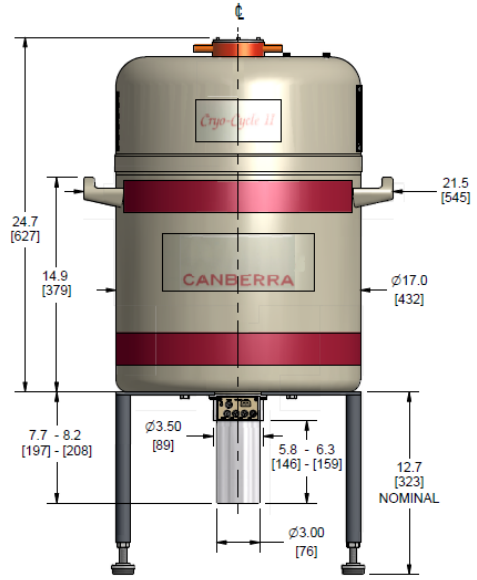
Flanged Cryostats | LIQUID NITROGEN CRYOSTAT



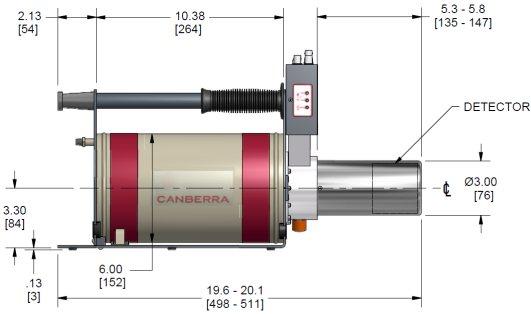
Flanged Cryostats | LIQUID NITROGEN CRYOSTAT



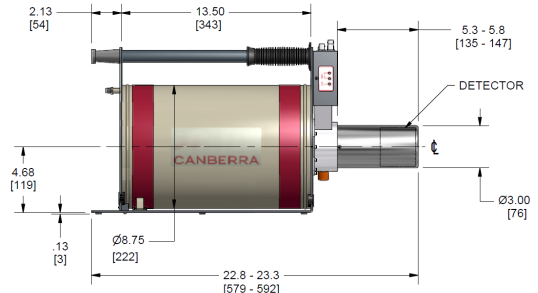
7906-30 Vertical Integral Cryostat
(also available in 7.5 and 15 liter version)



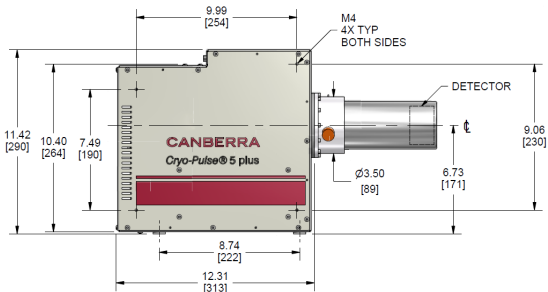
CCII-VI-F Vertical Integral Hybrid Cryostat



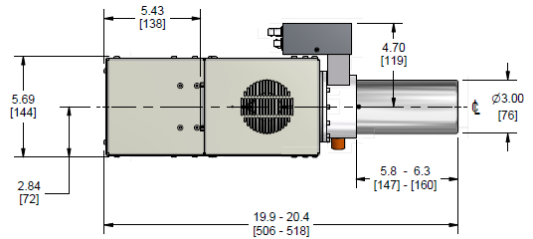
7935-2F Portable Multi-Attitude Cryostat (2 liter MAC)



7935-7F Portable Multi-Attitude Cryostat (7 liter Big MAC)



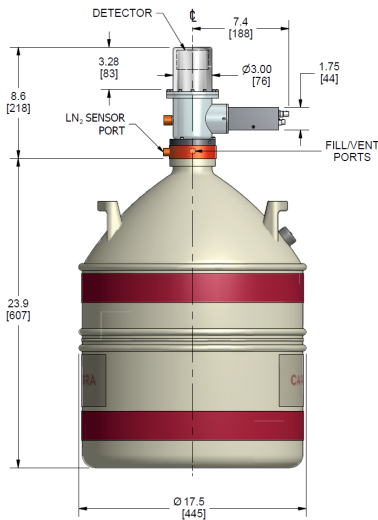
CP5-PLUS-F Electrically-Cooled Cryostat (side view)



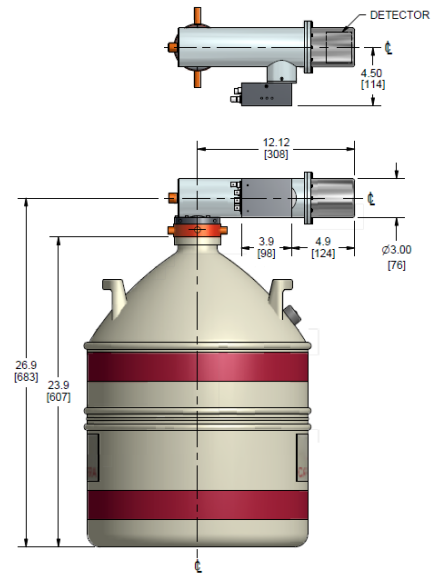
CP5-PLUS-F Electrically-Cooled Cryostat (top view – preamplifier can be oriented in other directions upon request)

Flanged Cryostats | LIQUID NITROGEN CRYOSTAT

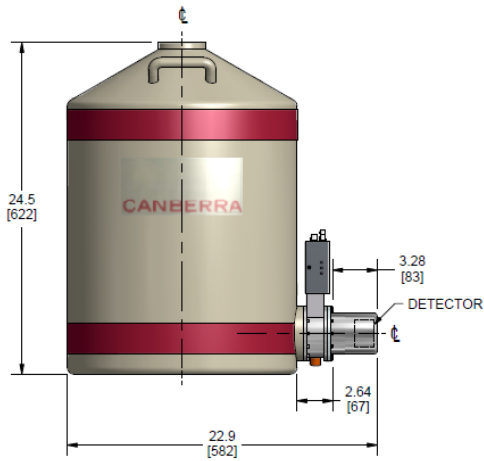
Metal Seal Flanged Cryostats
(available on 3 in. (76 mm) diameter endcaps only)



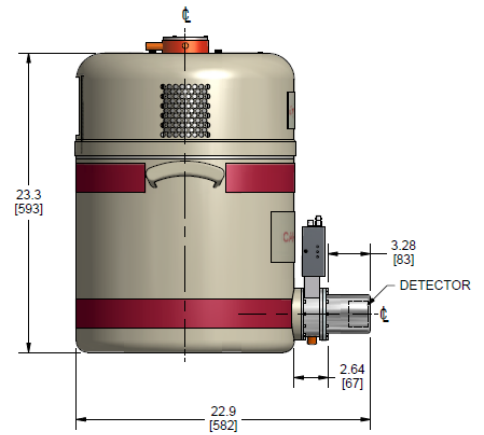
7500M Vertical Dipstick
(Available in D-30 Dewar or CCII-VD Hybrid Cryostat)



7600M Horizontal Dipstick
(Available in D-30 Dewar or CCII-HD Hybrid Cryostat)

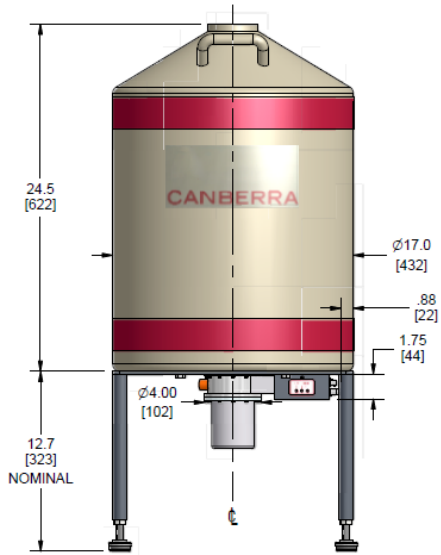


7905-30M Horizontal Integral
Cryostat (also available in 7.5
and 15 liter version)

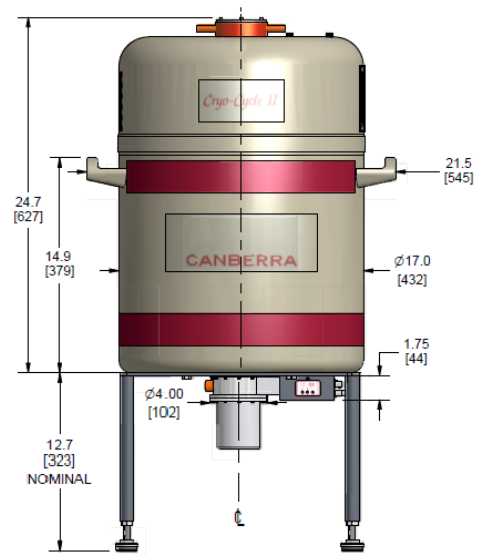


CCII-HI-FM Horizontal Integral
Hybrid Cryostat

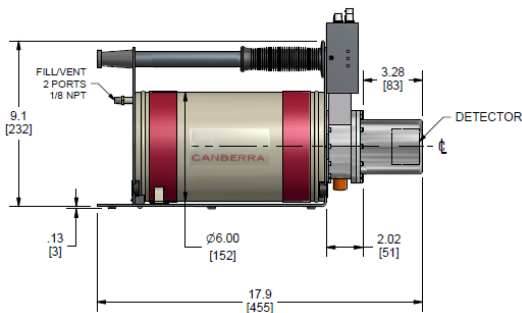
Flanged Cryostats | LIQUID NITROGEN CRYOSTAT



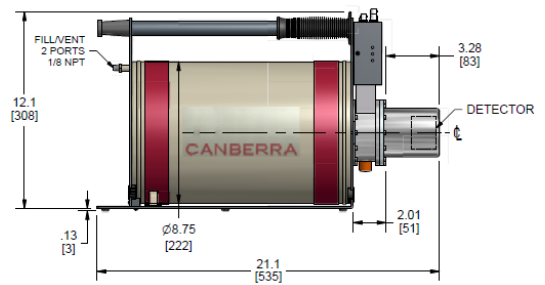
7906-30M Vertical Integral Cryostat
(also available in 7.5 and 15 liter version)



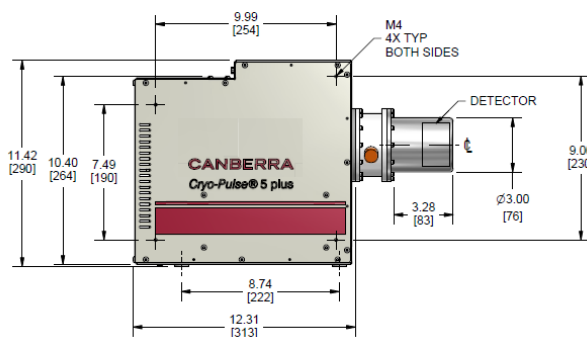
CCII-VI-FM Vertical Integral Hybrid Cryostat



7935-2FM Portable Multi-Attitude Cryostat (2 liter MAC)



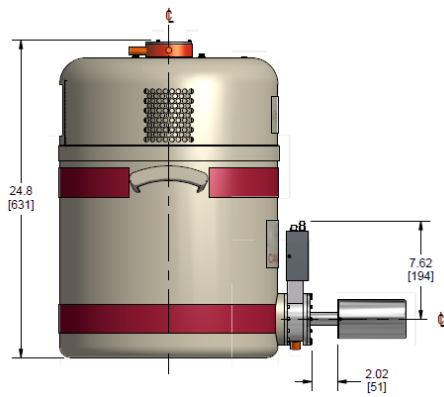
7935-7FM Portable Multi-Attitude Cryostat (7 liter Big MAC)



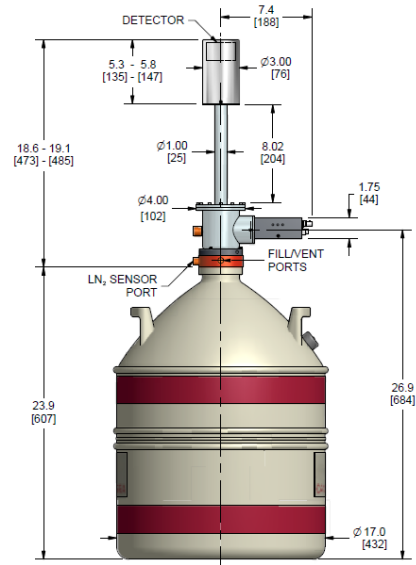
CP5-PLUS-FM Electrically-Cooled Cryostat

RDC OPTION

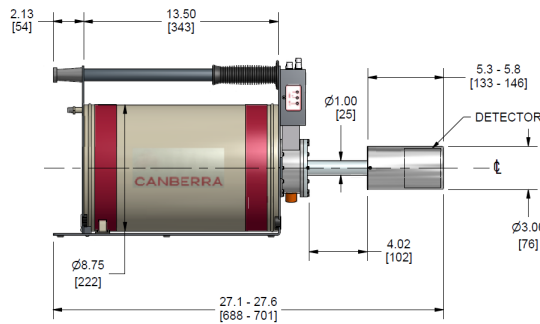
All flanged cryostat models (with exception of the vertical integral downlooking Cryo-Cycle™ II, model CCII-VI) can be fitted with an RDC option. Standard lengths for RDC elements are 2, 4, 6, 8 and 10 inches. Below are a few examples of LN₂ or electrically cooled cryostat models including the RDC option. The flanged Big MAC and Cryo-Pulse® 5 Plus with RDC-4 are commonly used in *in situ* counting (ISOCS™) systems.



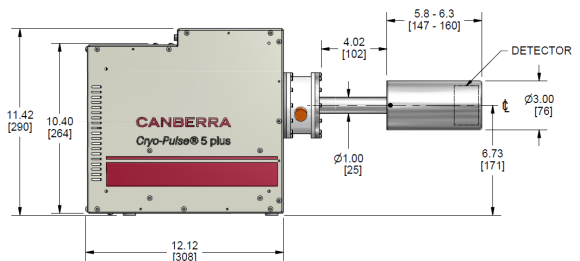
CCII-HI-F-RDC-2 Horizontal Integral Hybrid Cryostat



7500-RDC-8 Vertical Dipstick Cryostat in D-30 Dewar



7935-7F-RDC-4 Portable Multi-Attitude Cryostat (7 liter Big MAC)



CP5-PLUS-F-RDC-4 Electrically-Cooled Cryostat

