

ORTEC's high-performance, low-background Ge detector shields feature the highest quality workmanship and the best materials available. They include features which have evolved over years of experience in lead shield design. Options that make the shield easier to use also ensure continued smooth operation.

All ORTEC high-performance, low-background lead shields feature an 11-in.-diam x 16-in.-deep cavity, suitable for accommodating even 4-liter Marinelli beakers. A graded liner of copper and tin is provided for the suppression of lead x-rays. The bulk shielding material is certified Doe Run virgin lead (4-in.-thick). The support stand and shield jacket are made from low-carbon steel. All external surfaces are finished in a durable, attractive textured polyurethane. Internal (copper and lead) surfaces are polished and coated with a clear-acrylic lacquer to minimize tarnishing of the copper liner and prevent human exposure to lead.

With each ORTEC HPLBS, the following are supplied:

1. Rigid support stand
2. Installation and maintenance manual
3. Touch-up paint
4. Assembly tools
5. Lifting eyes and lid restraint brackets
6. Two heavy-duty, wood pallet/crate sets suitable for overseas shipping

HPLBS1 Shield

The bottom port on the shield includes two nested inserts that allow multiple fit options to the bottom port. The bottom through-hole is 3.5-inches. This can be increased to a 5-inch through-hole by removing the center insert. A second insert makes up almost the entire bottom of the lead shield providing a 9-inch through-hole when removed. The model LFT1 and can be used to remove the larger bottom insert from the shield should this be required. The LFT1 is not included with the HPLBS1; it must be ordered separately.

It is not expect to remove this larger insert; however, it is provided for possible changes that may be required for the customers' specifications. This 42-lb. insert can be removed and machined locally or shipped back to ORTEC for replacement and/or modification if needed without having the entire shield machined on-site or replaced.

The cutaway sketch shows the two nested ports that are now supplied with the model HPLBS1.

The HPLBS1 shield is designed to accommodate ORTEC cryostat "vertical dipstick" models CFG-PV-1 and CFG-SV or the X-COOLER II.

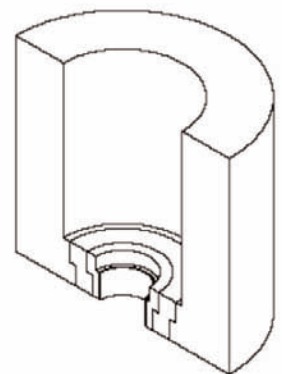
Close fitting plugs for the 3.5-inch through hole may be ordered as an option with the HPLBS1. Two standard models are available, PLG1 and PLG2.

PLG1 fits inside the 3.5-inch bottom port and closely around a vertical "dipstick" cryostat.

PLG2 is a split plug that fits inside the 3.5-inch bottom port and closely around the X-COOLER cold head. The X-COOLER systems require a split plug in order to fit between the larger capsule and cold head diameter. The two piece design allows the larger detector capsule to be positioned inside the shield and the PLG2 installed around the X-COOLER cold head.

HPLBS1F Front-Loading Shield

The HPLBS1F Shield is similar to the HPLBS1 Shield function, material, and appearance with the additional benefit of a hinged front door to allow easy access to the sample chamber. The bottom through-hole is 3.5-inches and can accommodate the PLG1 and PLG2. It does not include the nested inserts for larger through-hole sizes.



Nested Ports

Specifications of Models HPLBS1 and HPLBS1F

SHIELDED CAVITY DIMENSIONS 28-cm i.d. x 40-cm high
(11-in. i.d. x 16-in. high).

SHIELDING TYPE Solid-cast virgin lead with steel casing and graded-Z liner.

SHIELDING SPECIFICATIONS

9.5 mm (3/8 in.) low-carbon steel casing

101 mm (4 in.) certified Doe Run lead

0.5 mm (0.02 in.) tin sheet liner

1.6 mm (0.064 in.) soft-copper sheet liner

SUPPORT STAND MATERIAL Low-carbon steel square tubing and plate.

WEIGHT

Total Assembled 1,134 kg (2,500 lb).

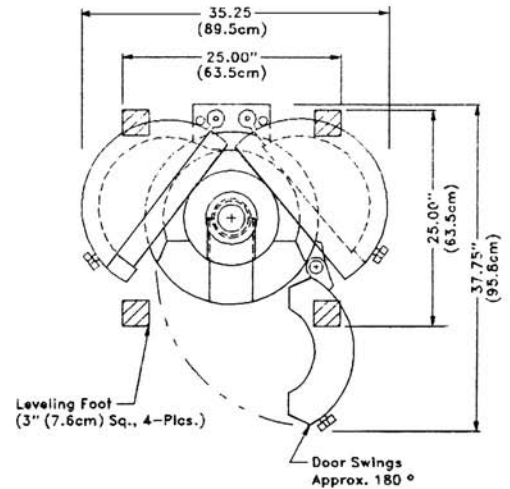
Shipping 1,270 kg (2,800 lb).

EXTERNAL DIMENSIONS

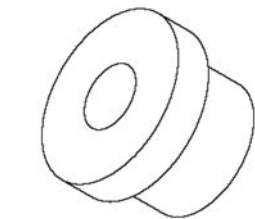
Shield 51-cm diameter x 63-cm high (20-in. diameter x 24-5/8-in. high).

Stand 61-cm square x 77-cm high (minimum) [24-in. square x 30-1/8-in. high (minimum)].

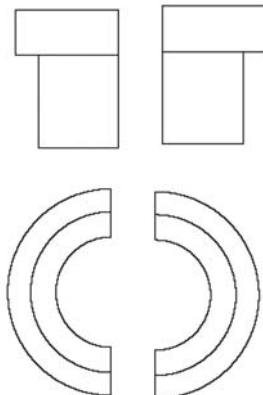
Assembled Height 139 cm (minimum) to 154 cm (maximum)
[54-3/4 in. (minimum) to 60-3/4 in. (maximum)].



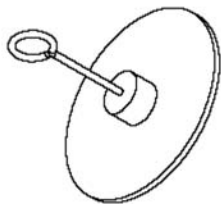
Top View With Lids And Front Door Opened
Floor Loading: 70 Lbs./sq.in. (5Kg/sq.cm)



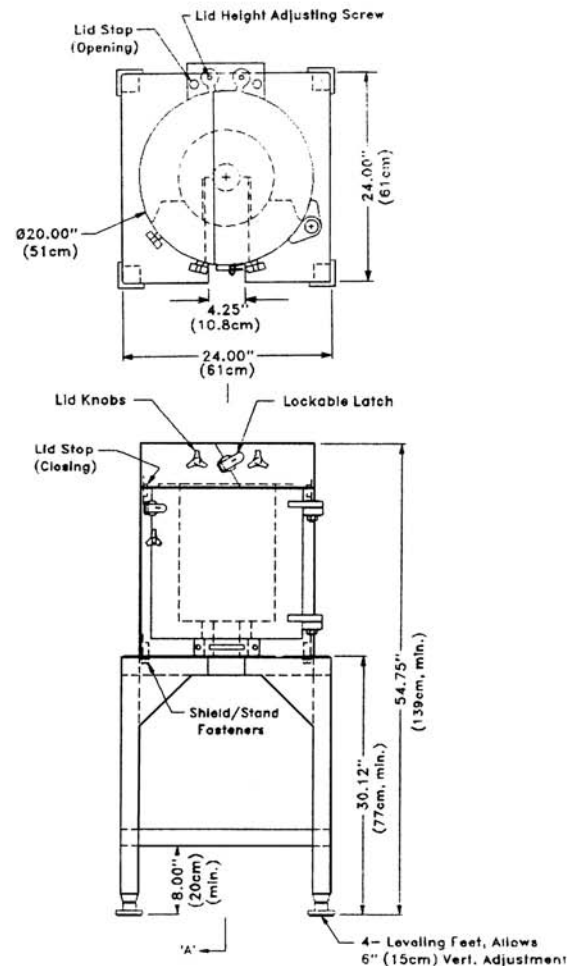
PLG1



PLG2



LFT1



HPLBS Series

High-Performance, Low-Background Shields and Accessories for Ge Detectors

HPLBS2F

The HPLBS2F Shield is similar to the HPLBS1F, in that it combines front loading with the split-top shield. It differs, however, in that it is designed for use with an ORTEC "J" Type cryostat Model CFG-SJ or CFG-HJ. A compact design results in the need for only 2-ft x 4-ft floor space [61-cm x 117-cm], plus clearance for opening of lids and the front door.

Specifications

SHIELDED CAVITY DIMENSIONS 28-cm i.d. x 40-cm high (11-in. i.d. x 16-in. high).

SHIELDING TYPE Solid-cast virgin lead with steel casing and graded-Z liner.

SHIELDING SPECIFICATIONS

9.5 mm (3/8 in.) low-carbon steel casing

101 mm (4 in.) certified Doe Run lead

0.5 mm (0.02 in.) tin sheet liner

1.6 mm (0.064 in.) soft-copper sheet liner

SUPPORT STAND MATERIAL Low-carbon steel square tubing and plate.

DETECTOR ACCESS SLOT WIDTH 4.5 cm (1-3/4 in.).

WEIGHT

Total Assembled 1,134 kg (2,500 lb).

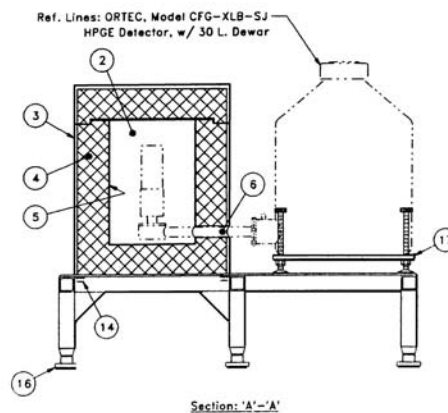
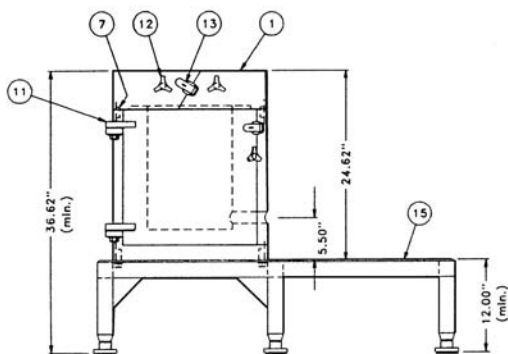
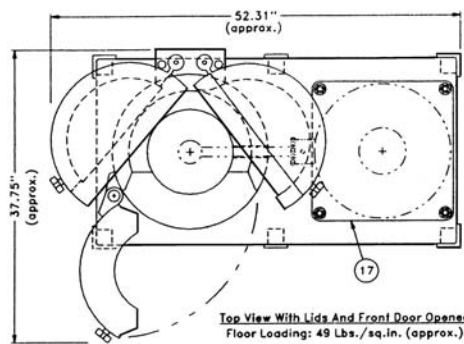
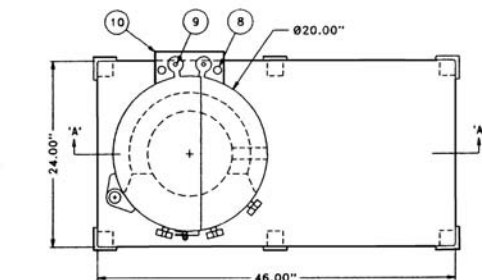
Shipping Weight 1,270 kg (2,800 lb).

EXTERNAL DIMENSIONS

Shield 51-cm diameter x 63-cm high (20-in. diameter x 24-5/8-in. high).

Stand 61 cm x 117 cm x 77-cm high (minimum) [24 in. x 46 in. x 12-in. high (minimum)].

Assembled Height 94 cm (minimum) to 109 cm (maximum) [37 in. (minimum) to 43 in. (maximum)].



Legend

1. Model LSSJ-1116 Low background lead shield
2. Shielded cavity: 11" i.d. x 16" tall
3. Steel casing: 3/8" thick, low carbon
4. Cast virgin lead: 4" thick (minimum)
5. Sample cavity liner: .020" Cd and .064" Cu
6. Detector coldfinger slot with cable way
7. Lid stop (closing)
8. Lid stop (opening)
9. Adjusting screw, lid height
10. Enclosure, lid pivot mechanism
11. Front-door pivot hinge
12. Knob for front door and lids
13. Lockable latch for front door and lids
14. Shield to table fasteners
15. Low carbon steel support stand
16. Leveling foot (3" square) allows 6" vertical adj
17. Model DS-30, dewar stand (optional extra)

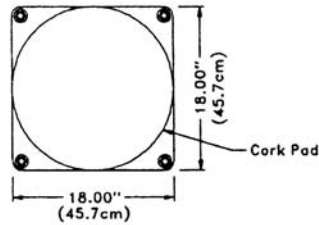
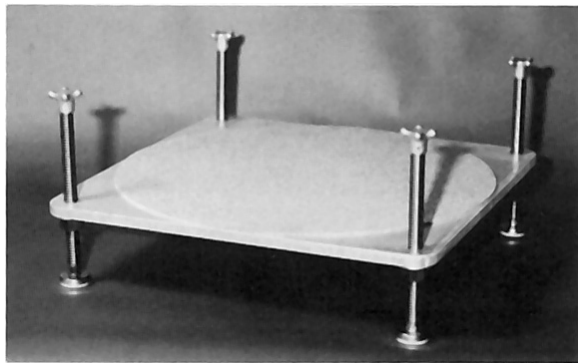
HPLBS Series

High-Performance, Low-Background Shields
and Accessories for Ge Detectors

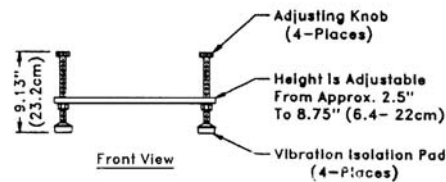
Accessories for HPLBS1 and HPLBS1F

DS30 Dewar Leveling Stand

Provides up to 15 cm (6 in.) of vertical height adjustment; features vibration isolation pads to minimize detector microphonics.



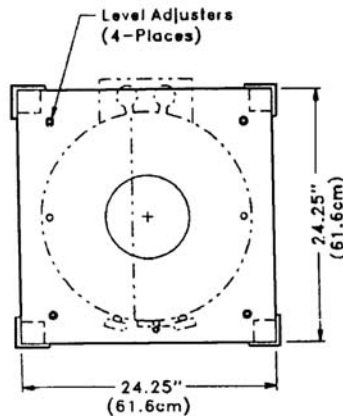
Top View



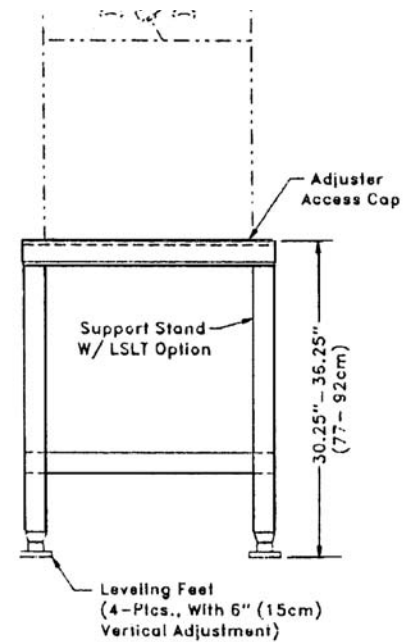
Front View

LSLT Table-Top Leveling Option

LSLT allows extremely precise adjustment of the leveling of the HPLBS1 Shield. Leveling is performed at table top height using a single hex-key wrench. It can compensate for floor deviations as great as 16 mm in a 61-cm square (5/8 in. in a 24-in. square). When correctly adjusted, the Model LSLT allows the biparting lids of the shield (when unlatched) to swing slowly and gently to the fully open position, and stay there allowing full SAFE access to the counting chamber.



Top View



Front View

Specifications subject to change
082108

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