

WARNING

This detector is equipped with a thin Beryllium or Polymer window. These windows are fragile so they should not be touched. The windows can be damaged by moisture condensation so they should be kept clean and dry at all times. The detector should not be stored or operated in a humid environment. If moisture condenses on the window during normal operation, either the humidity is too high or the detector has a vacuum problem. During cool-down or warm-up cycles when the vacuum getter outgasses, some condensation may appear. This is normal. It should go away as soon as the getter repumps the system.

Damage to these windows caused by physical abuse or harsh environments is not covered by the warranty.

Canberra

Ge 12"

Detector

DP00131

Supplemental Data Sheet

Argonne National Lab

Service Order RAN Z-0406573

Detector Model: GUL0110P

Cryostat Model: 7935-2F/S

Preamplifier Model: 2008S (HRR)

Serial Number: 07034957

Original Detector Specifications:

Amplifier Shaping Time (uSec)	Energy Resolution at 5.9 keV	
	1k CPS Rate (eV FWHM)	100k CPS Rate (eV FWHM)
12	150	---
6	160	---
3	170	---
0.25	275	325
0.125	300	350

Measured Test Results:

Amplifier Shaping Time (uSec)	Energy Resolution at 5.9 keV	
	1k CPS Rate (eV FWHM)	100k CPS Rate (eV FWHM)
12	114	---
6	118	---
3	127	---
0.25	224	227
0.125	265	266



CANBERRA

DETECTOR RESTORATION RECORD

CUSTOMER NAME: Mr. Petr Ilinski

FIRM/INSTITUTION: Argonne National Laboratories APS

Detector Type	<u>Ultra LEGe</u>	Model	<u>GUL0110P</u>
Manufacturer	<u>Canberra</u>	Serial Number	<u>07034957</u>
Date Received	<u>06/11/04</u>	Service Number	<u>Z-0406573</u>
Date Returned	<u>03/02/05</u>	Warranty Period	<u>90 days</u>

Receipt and Physical Inspection

Wipe Test for Removable Contamination

Cool-Down and Test

LN₂ Loss Rate 1.34 **Liters/day**

Resolution ----

Diagnosis

No output due to excessive detector leakage current

Disassemble and Clean Hardware

Element Repair

Replace detector element

Reassemble and Vacuum Bake Hardware

Helium Leak Test

- Repair Hardware**
- Mount Detector, Evacuate & Leak Test**
- Cool Down and Test**
- Temperature Cycle**

- Cool Down and Retest**
- Bias Overnight & Retest**

- Clean** **Replace or** **Repaint Dewar**

- Clean-up and prepare for Shipment**

- Pack for Shipment**

- Ship and Notify Customer**
Sent an email off to the customer letting them know that we are preparing their detector for shipment.



DETECTOR SPECIFICATIONS AND PERFORMANCE DATA

Specifications

DETECTOR MODEL GUL0110P SERIAL NUMBER 07034957
 CRYOSTAT MODEL 7935-2F/S PREAMPLIFIER MODEL 2008S

The purchase specifications, and therefore the warranted performance, of this detector are as follows:
 (Electric cooling may degrade performance by as much as 10%.)

Energy	5.9 keV	122 keV	1332 keV
Resolution [eV (FWHM)]			

Cryostat description (if special) Flange Type Mac having a 1.0" x 12" long end cap

Physical Characteristics

Active diameter 11.3 mm
 Active area 100 mm²
 Thickness 10 mm
 Distance from window 5 mm
 Cryostat window thickness 0.025 mm
 Cryostat window material Beryllium

Electrical Characteristics

Depletion voltage (-)300 V dc
 Recommended bias voltage (-)500 V dc
 Reset rate at recommended bias 3.0 sec (Reset preamp only)
 Preamplifier test point voltage at recommended bias ----- V dc (RC preamp only)

Resolution and Efficiency

With amp time constant of 12 Microseconds See Attached Supplemental Data Sheet

Isotope	⁵⁵ Fe	⁵⁷ Co	⁵⁷ Co	⁶⁰ Co	Peak to Bkgd.
Energy (keV)	5.9	6.4*	122	1332	
FWHM (eV)	114		503		
FWTM (eV)	210		926		

*Substitutes for ⁵⁵Fe in some cases where ⁵⁵Fe peaks are not well separated.

Cool Down Time 4 Hours Cryostat Liquid Nitrogen Consumption Rate <1.2 Liters per Day

Tested by: *John Elmer* Date: 03/01/05
 Approved by: *Stephen Bishop* Date: 03/01/05