

DETECTOR SPECIFICATION AND PERFORMANCE DATA AFTER REPAIR CERTIFICATE OF CONFORMITY

Specifications

Detector Model BE5030PSerial number b 14041Cryostat Model 7500-RDC-6-ULBOrder number GHR6850Preamplifier Model 2002CCryostat description or Drawing Number if special 7500-RDC-6-ULB

Physical Characteristics

Active Diameter	<u>80.8</u>	mm	Distance from window (outside)	_____	mm
Active Area	<u>5000</u>	mm ²	Window thickness	_____	mm
Thickness	<u>31.0</u>	mm	Window material	_____	

Electrical Characteristics

Depletion voltage (+) 3000 Vdc
 Recommended bias voltage Vdc (+) 4000 Vdc
 Reset rate at recommended bias / sec (PO preamp only)
 Preamplifier test point voltage at recommended bias -0.4 Vdc (RC preamp only)
 Preamplifier output polarity Pos

Resolution and Efficiency

With amp time constant of 4 μ s - 7.2 μ s Rise Time, 0.8 μ s Flat Top

Isotope	⁵⁵ Fe	⁵⁷ Co	⁶⁰ Co	
Energy (keV)	5.9	122	1332.5	
FWHM (eV)	336	623	1754	
FWTM (eV)		1146	3248	

Cooldown time 16 h

- Tests are performed following IEEE standard test ANSI/IEEE std325-1996
- Standard Canberra electronics used - See Germanium detector manual Section 7

Tested by :

Date :16/11/2018

Approved by :

Date : 16/11/2018

CSNV Repair nr :	GHR6850
Date of arrival :	02/08/2018
Subs repair nr :	NSE13759APR
Customer order nr :	

Isocs:	☒ YES / ☐ NO
Quote:	☐ YES / ☐ NO

DETECTOR SERVICE REPORT

Customer identification

Subsidiary : **CAND DE**
 Customer name :
 Contacted person :
 Address :
 Transporter:
 Shipping nr:

Detector elements

Detector Model : **BE5030P** s/n **b 14041**
 Cryostat Model : **7500-RDC-6-ULB**
 Preamp model : **2002C** s/n
 Dewar : s/n
 Collar :
 Cables :
 HV shut-off
 Manuals
 Carry handle
 Muffler
 Other **White protection cap** s/n
 s/n

Visual Inspection

Endcap	☐ broken	☐ bent	☐ dented	☐ OK
Cryostat	☐ broken	☐ bent	☐ dented	☐ OK
Dewar	☐ broken	☐ bent	☐ dented	☐
Preamp	☐ broken	☐ bent	☐ dented	☐ OK

Tests before cool down

Test point ☒ YES ☐ NO
 Defective cooled fet assembly ☐ YES ☒ NO
 Defective : ☐ Field Effect Transistor ☐ Feedback Resistor ☐ Feedback capacitor ☐ Protection diode ☐ Test Capacitor ☐ No contact
 Defective preamp ☐ YES ☒ NO
 Defective : ☐ HV network ☐ Electronics

Detector tests (cooled down)

☐ Resolution conform to specs : ☐ YES ☐ No . keV

☐ Vacuum OK	☐ Damaged components of preamp
☒ Vacuum insulation problem	☐ Defective components of preamp
☐ HV leakage to the ground	☐ Peak shift
☐ Internal ☐ External	☐ Pole zero
☐ Detector leakage current	☐ Drain current
☐ OK	☐ Oscillations
☒ Increased (starting at 3500 V)	☐ Neutron damage
☐ Breakdown at	☐
☐ Microphonics : ☐ YES ☐ NO	

Replaced parts

☐ Feedthroughs ☐ Preamplifier ☐ Dewar ☐ Crystal ☐ Endcap ☐ Collar ☐ Cryostat ☐

Comments: Incoming test showed us some vacuum degradation and an increased crystal leakage current problem. Internal hardware has been checked. Crystal has been re-implanted, re-etched and remounted. Vacuum has been reconditioned and checked after a cycle. Detector has been 4 times tested and cycled and has had 1 long term stability test. ISOCS measurements have also been performed prior to return.

PRODUCTION MANAGER : P. VERMEULEN

Date : November 19, 2018

Signature : 