

DETECTOR TESTS WITH THE COMMISSIONING LOCK



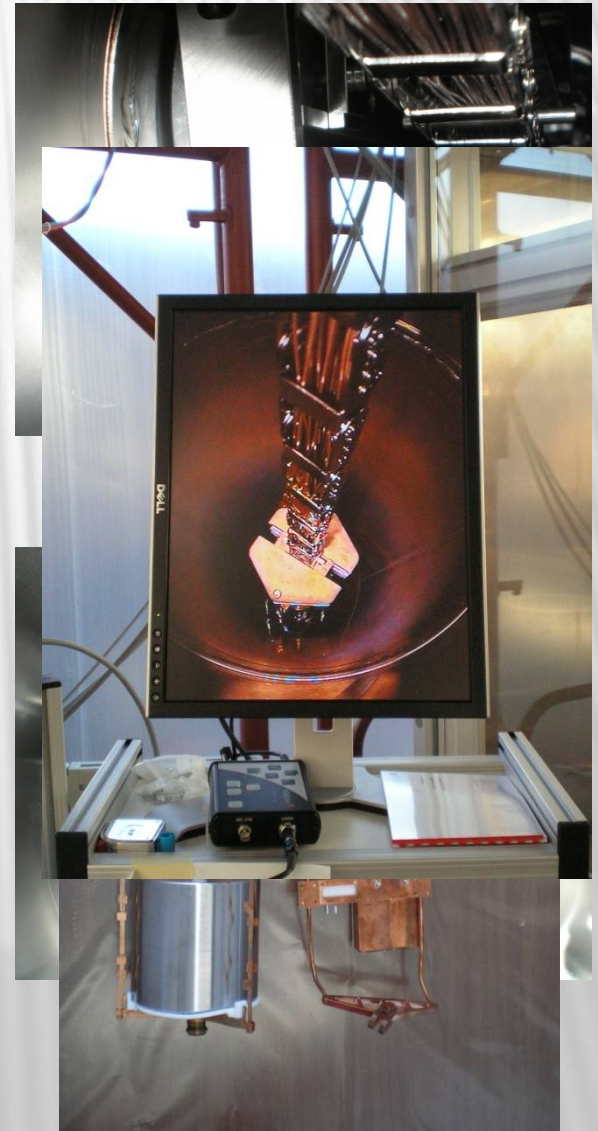
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OUTLINE

- Summary of activities
- Detector operations
 - Mounting
 - Cooling
 - Warming
- Result of the detector test
- Outlook

ACTIVITIES – JUNE TO SEPTEMBER

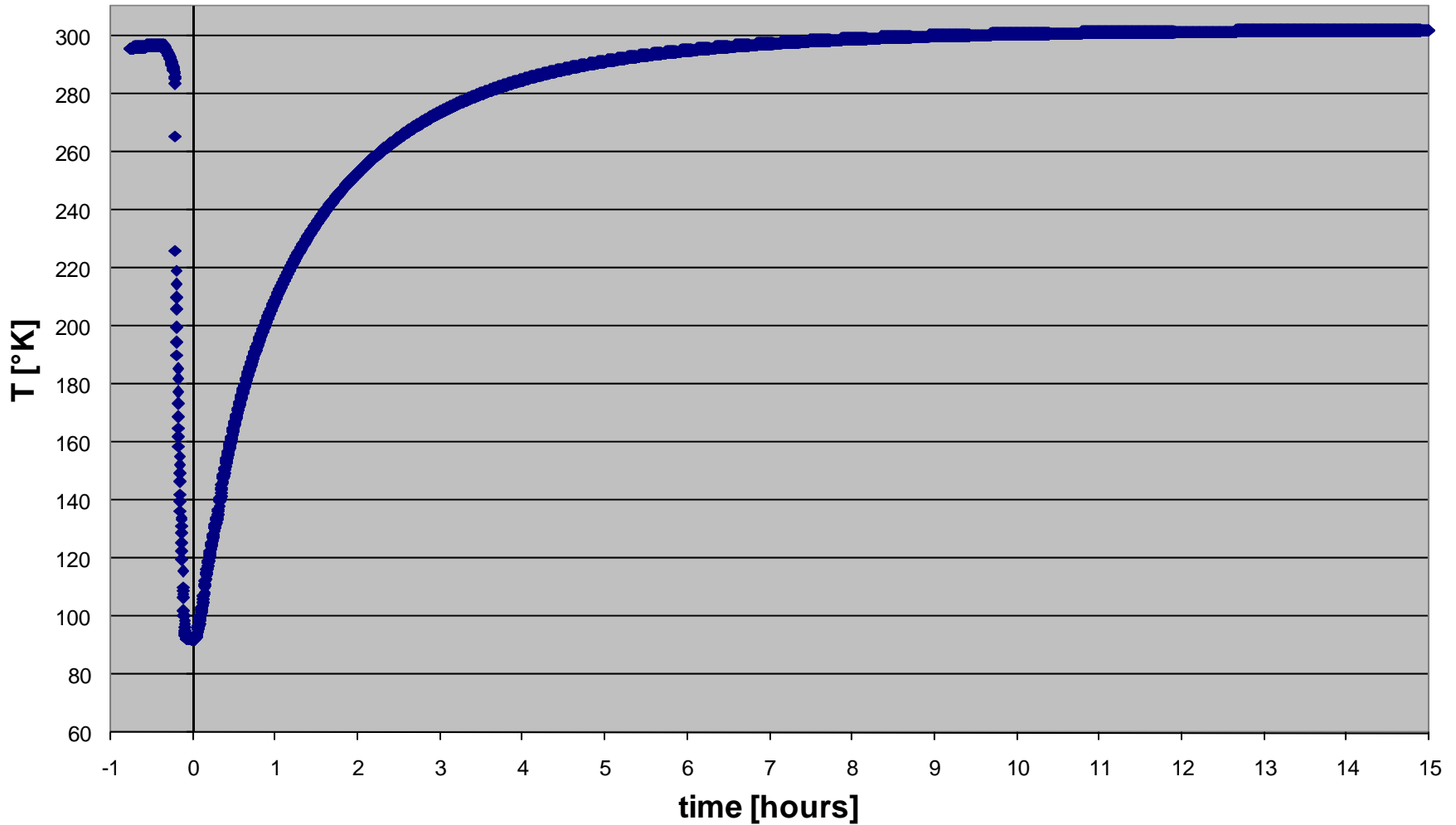
- 30/06 Pendulum test → max 5 mm with ~200 mm/min (no PLC)
- 03/07 Dewar installation, connection with lock
- 06/07 1st Chain problem (repaired by people onsite)
- 09/07 Start of warm electronic test in Dewar
- 15/07 Replacement of the ramp by a wheel by Munich
- 18/07 Chain accident
- 21/07 Steel rope replaced, PLC installed
- 25/07 Mockup stuck in IR shield (using nominal speed - 400 mm/min). Chain oscillation ~1 cm with 200 mm/min.
- 27/07 Work with chain / motor / PLC continued, camera installation



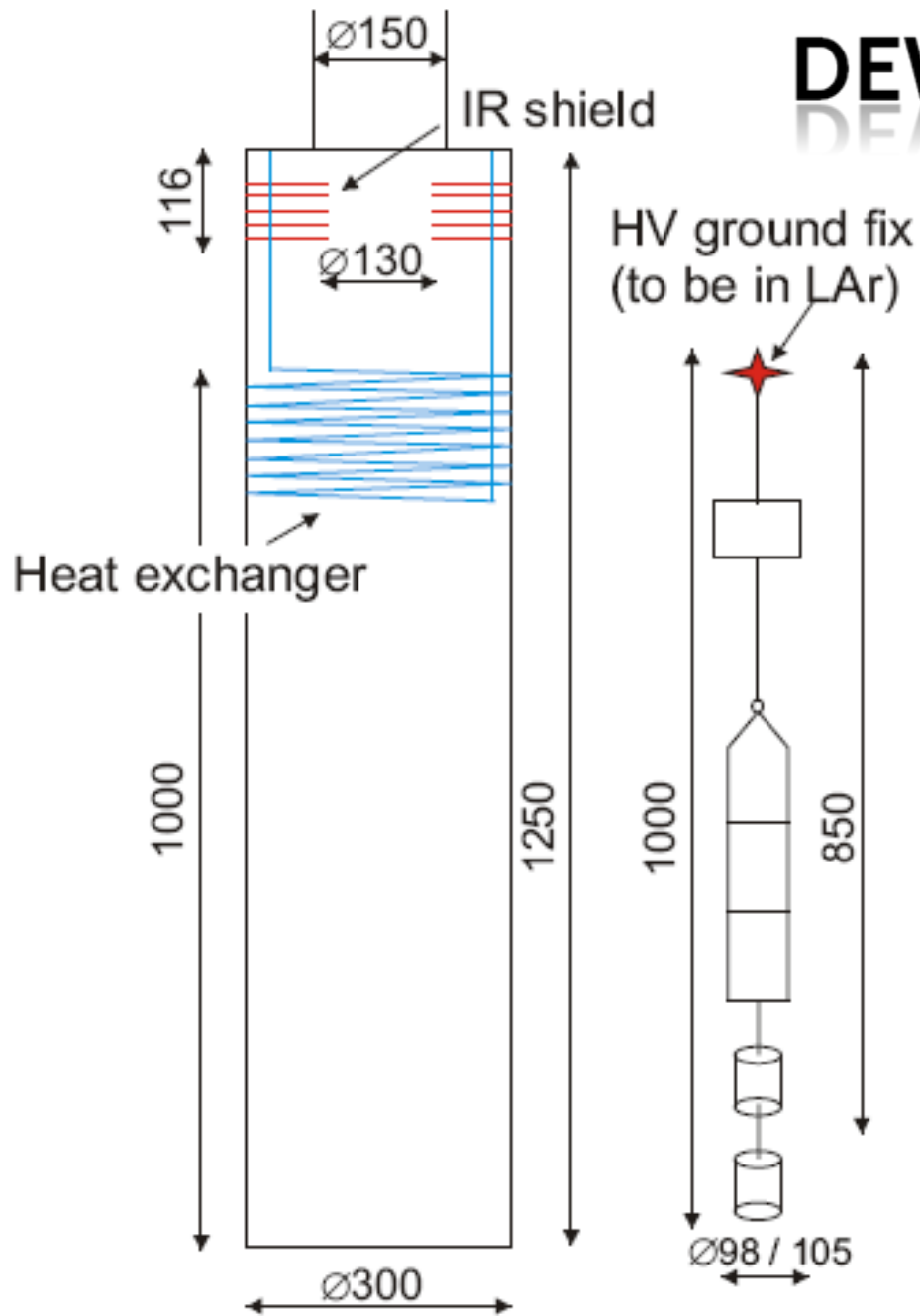
ACTIVITIES – JUNE TO SEPTEMBER

21/07 Power filled with L Ar

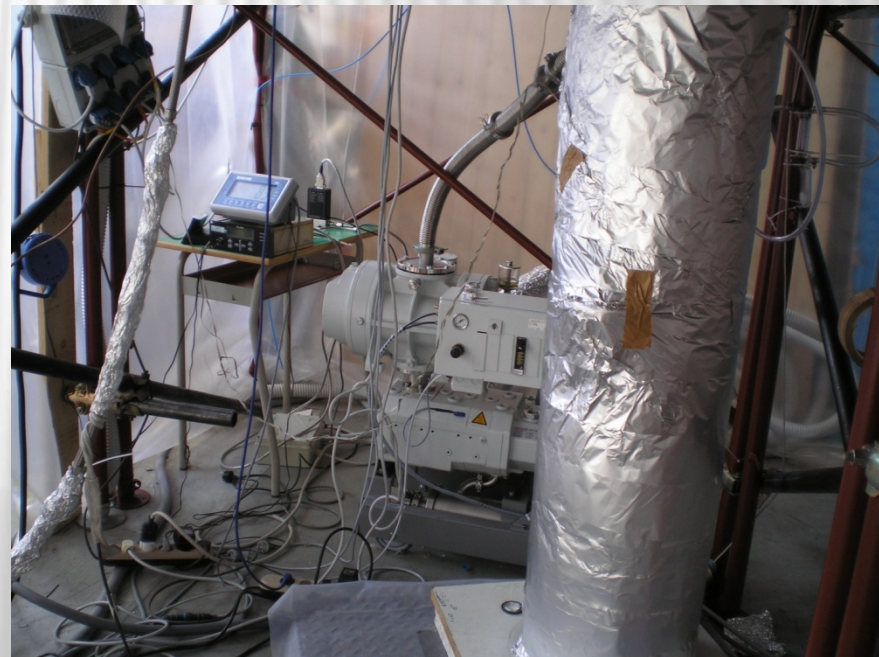
Cooling-Warming Test



DEWAR



- LN₂ active cooling test
 - 15-10 kg/day → 5 kg/day (filling level 105 cm)
 - expected: 6kg/day → 0.2 kg/day (G.Zuzel test at MPIK)
 - Not used at the moment



DETECTOR MOUNTING



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- Glove box flushing with N₂ gas: [O₂] < 5%



DETECTOR MOUNTING



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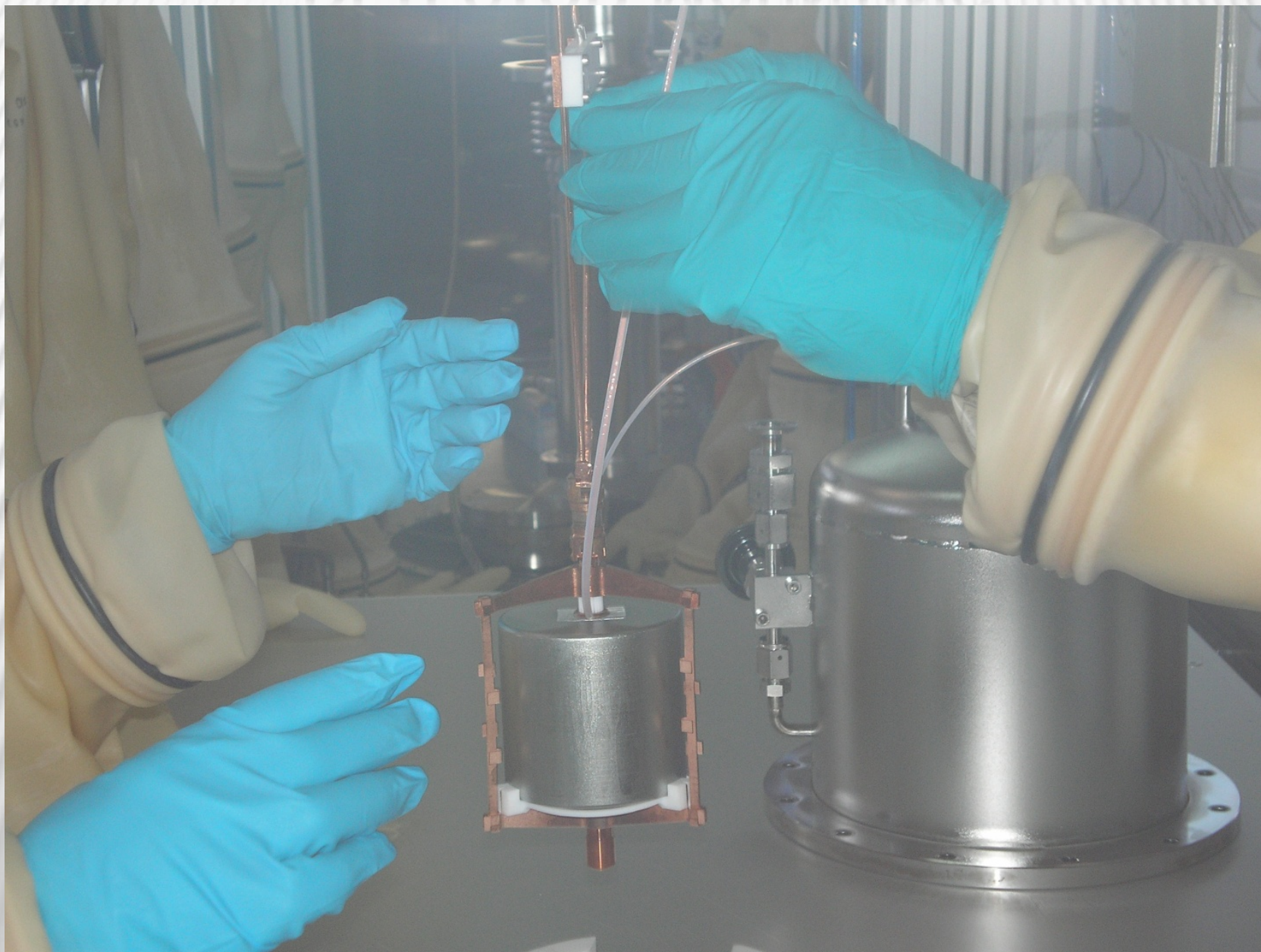
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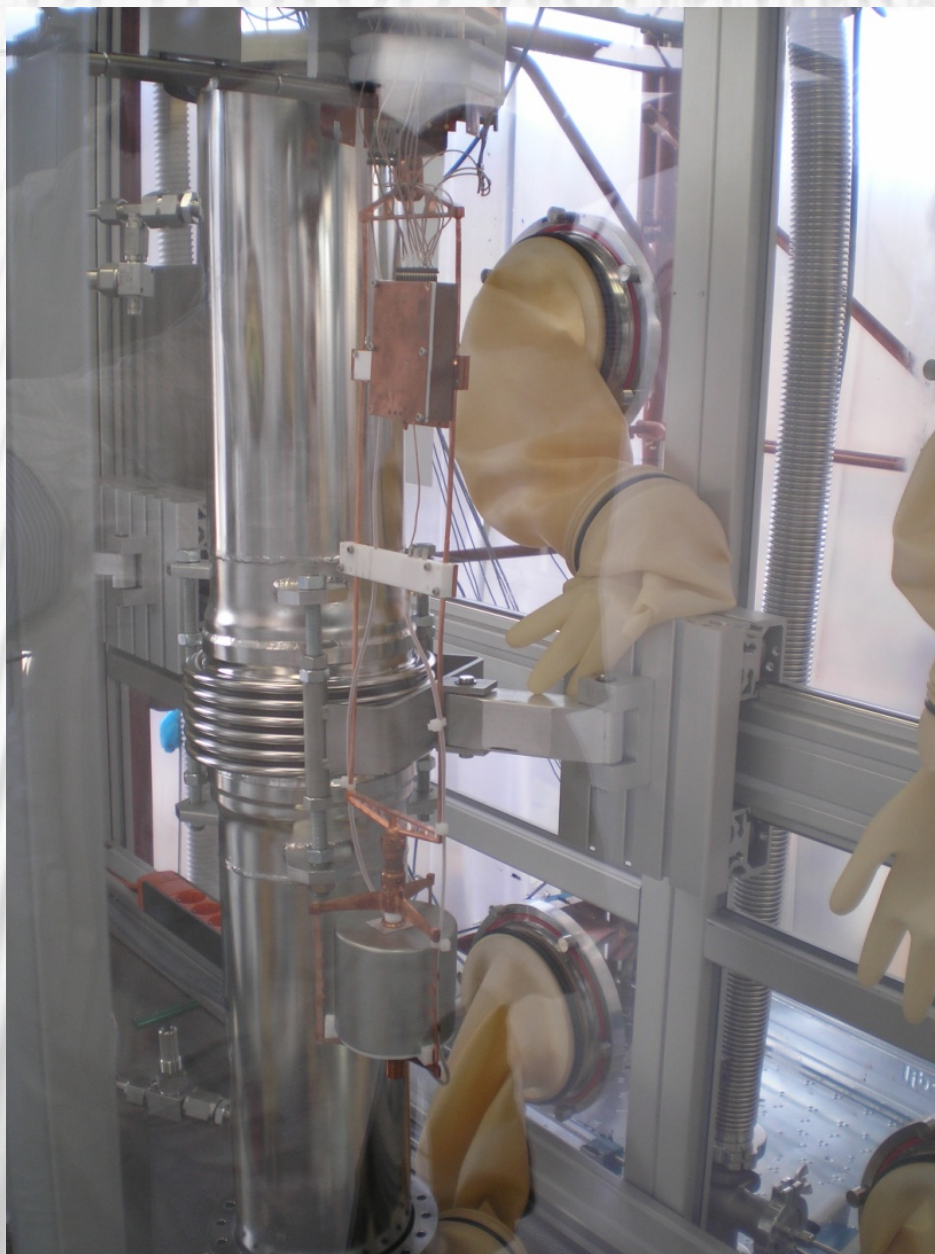
DETECTOR MOUNTING



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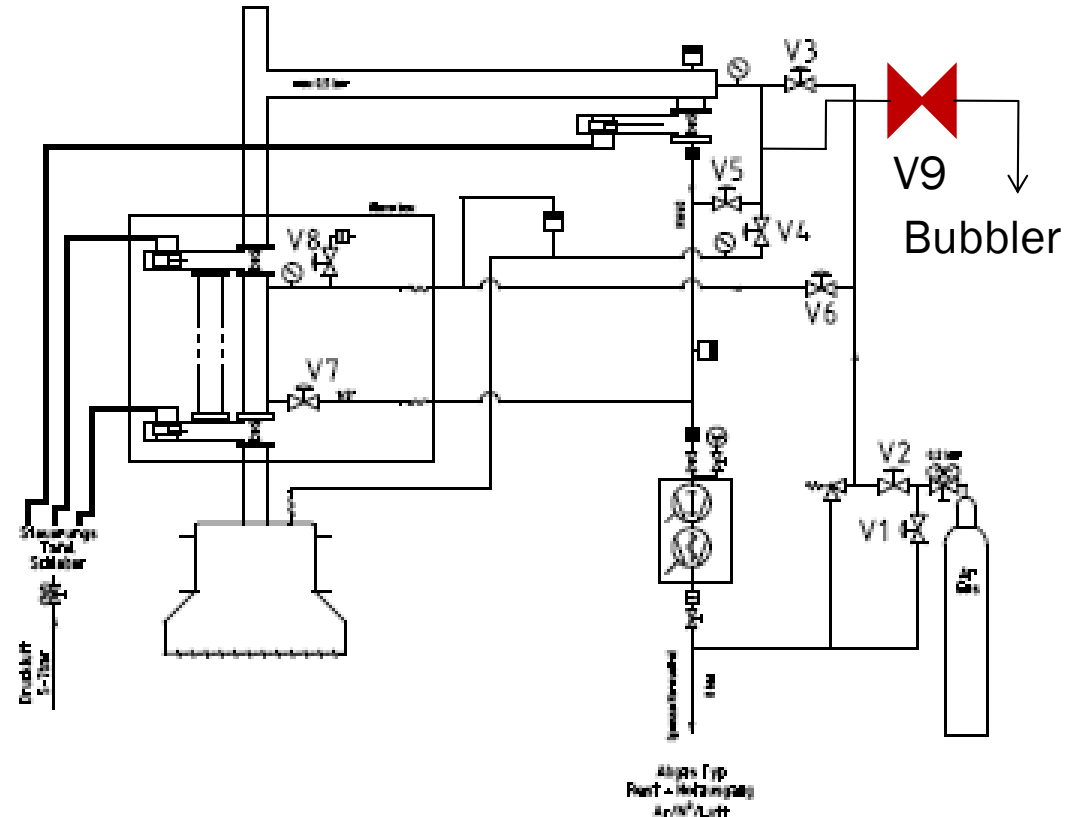


DETECTOR MOUNTING



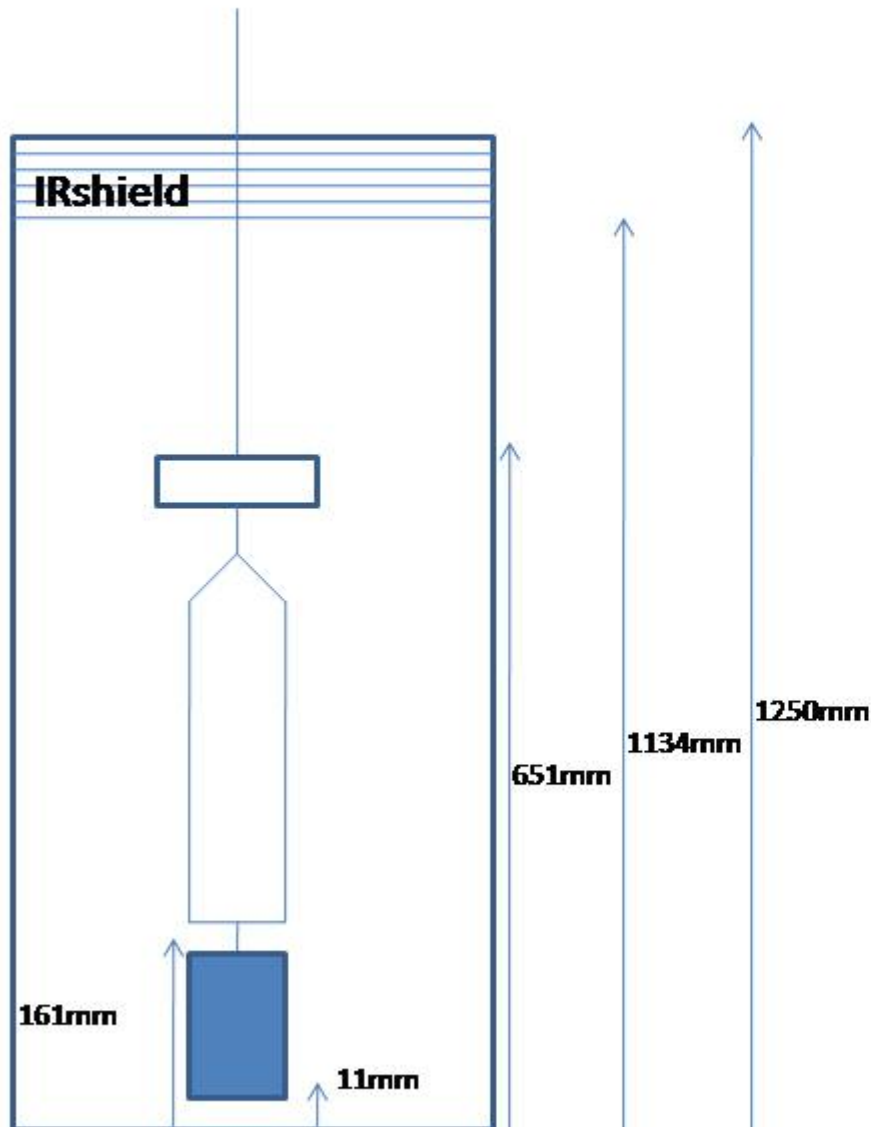
COOLING PROCEDURE

- All valves and shutter B closed, bottom bubbler open
- Detector above shutter A
- Attach vertical tube with bellow (only 4 screws)
- Pump lock, including vertical tube, to 0.1 mbar: Open V3, start pump, open CF40, close CF40, stop pump
- Purge lock, including vertical tube, with Ar gas: open V2, filling few mbar above Patm, close V3, close V2 (process to be repeated)
- Pressure equalization lock-cryostat: Open V4
- Open Shutter B, close V4
- Close bottom bubbler, open top bubbler (V9)
- Lower detector (100 mm/min): 35 min



| | | |
|--|---|--|
| <ul style="list-style-type: none"> Schweißpunkt Ring / Koppelpunkt Vakuumpumpe in Rotation Vakuumpumpe in Drehrichtung | <ul style="list-style-type: none"> Schaltventil Sicherheitsventil Rückschlagventil Hochvakuumventil Elektrolyse-Überspannung Vakuummessung Druckregulierung Schweißgaszufuhr, inkl. 2 Rückdrückventile Gaszufuhr Rückdruck Inertgaszufuhr | <ul style="list-style-type: none"> V27 AD = Standard für An-Gas-Zufuhr NW100 = Standard für Vakuum-Pump-Zufuhr NW100 = Schweiß-Pump-Zufuhr CF-Flasche mit Cu-Stiftung als Standard Luftgasventilanlage V27 AD mit VDR als Standard |
|--|---|--|

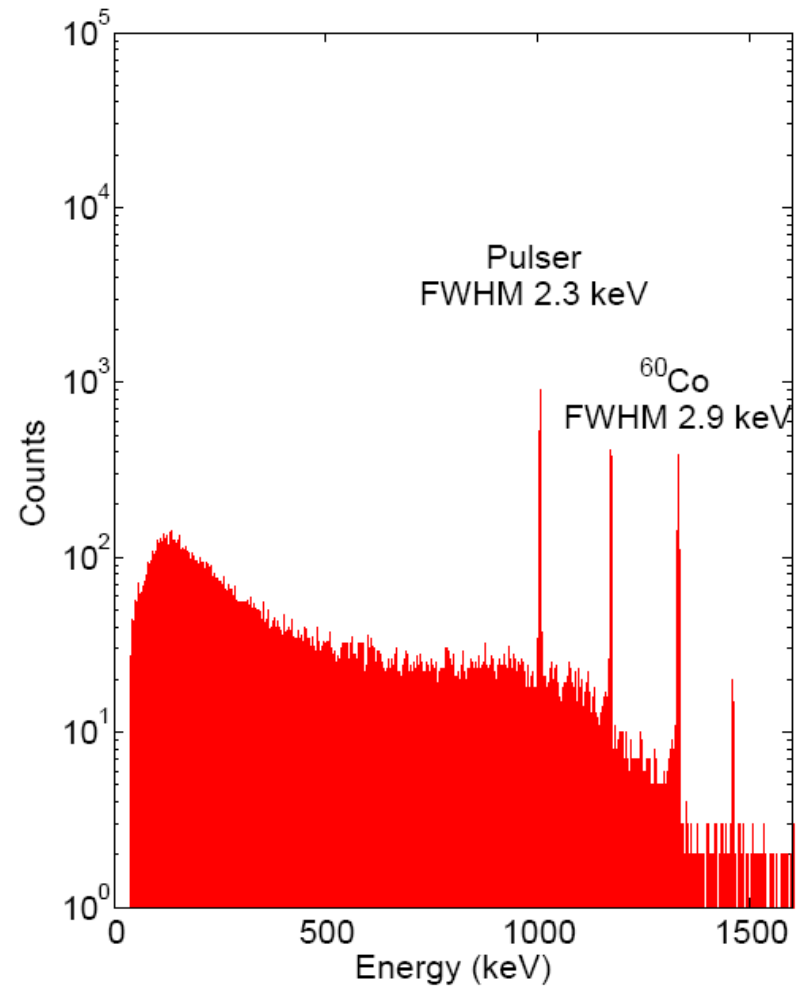
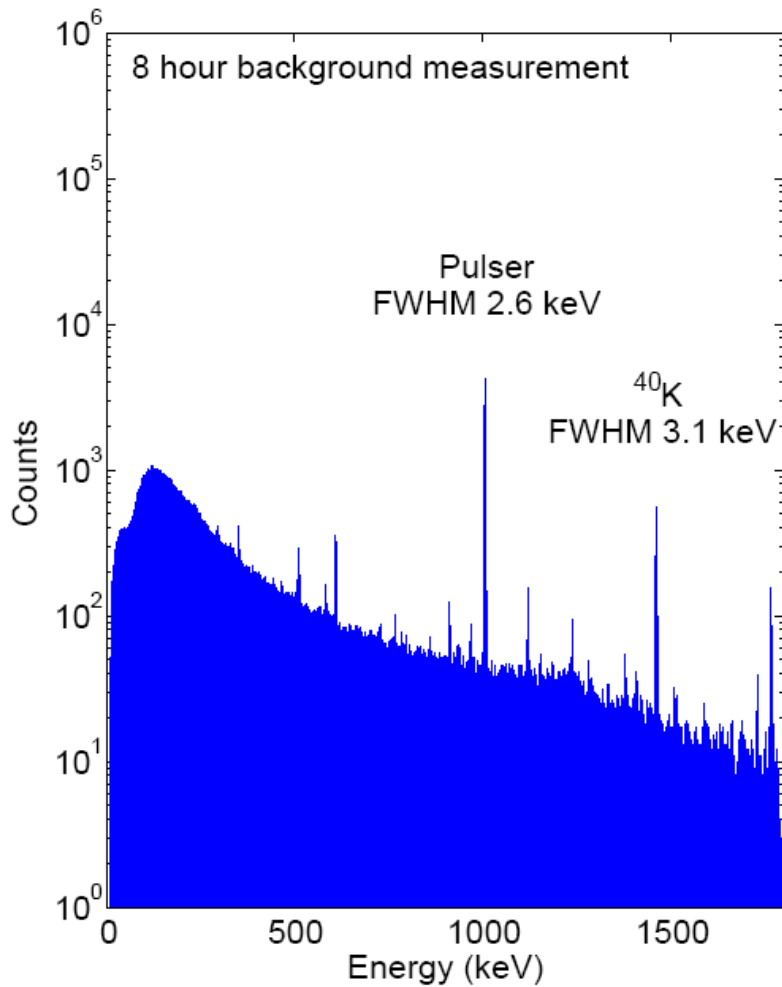
Warming up procedure



1. Start position : **-2675 mm**
2. Start flushing (input at removable vertical tube, output at the top of the lock)
3. Lifting up with 50 mm/min until the top of the pogopin reach the bottom of the IR shield : position **-2200 mm**
4. Break until oscillation stop
5. Lifting up with 50 mm/min until the top of the detector reach the bottom of the IR shield: position **-1710 mm**
6. Break until oscillation stop
7. Lifting up with 50 mm/min until the bottom of the detector pass the IR shield: position **-1430 mm**
8. Lifting up with 100 mm/min until position **800 mm**
9. Close bottom shutter
10. Open vertical tube 9h latter to do the methanol bath

RESULT

- No leakage current (<20 pA at 3500 V)
- FWHM 2.9 keV at 1.332 MeV (40 cm signal cable)



OUTLOOK

- Week 40
 - Repair of the steel wire on motor drum
 - Re-start of active cooling (with G.Zuzel)
 - Lower mockup in LAr: chain oscillation test
- Week 41
 - Repeat cooling cycle with prototype detector: verify new warm up procedure (LC measurement)
 - Coax-coax pogo pin matrix test with mockup(s)
- Week 42-44
 - 2 detector string
- If ops successful: ready to move glove box in hall A