

Helium 3 Insert (ULT-01) Test Report
November 1, 2007

Summary:

Base temperature of 0.28 K was held for more than 19 hours (better hold times have measured in 2008). This result is reasonably close to the design spec of 24 hour hold time and 0.30 K base

System Description:

Insert used in conjunction with the Janis CryoFurnace (CRYO-01)

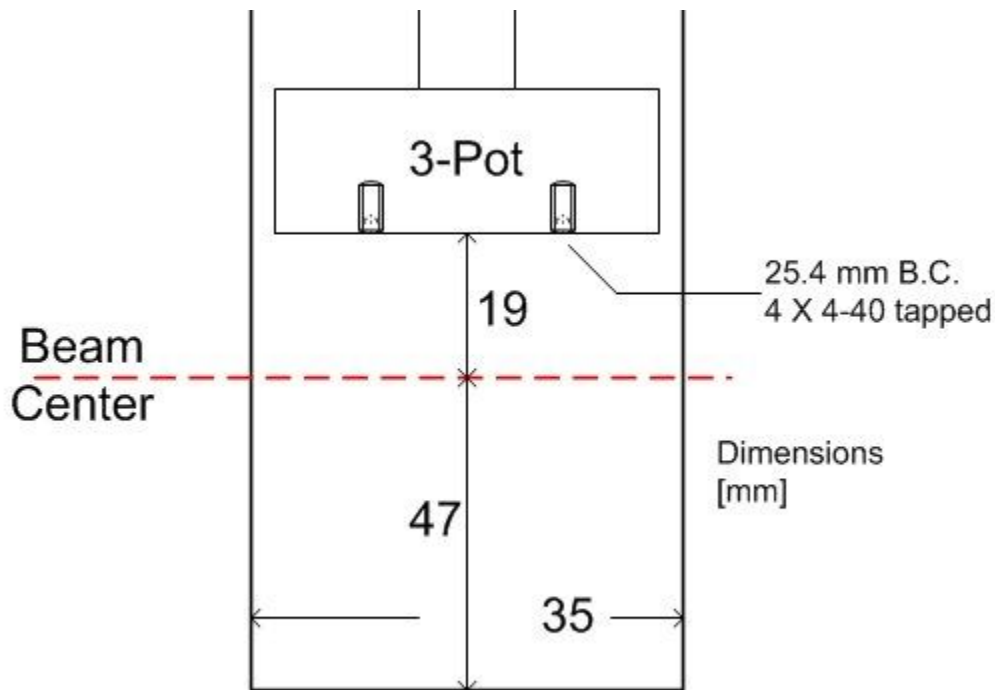
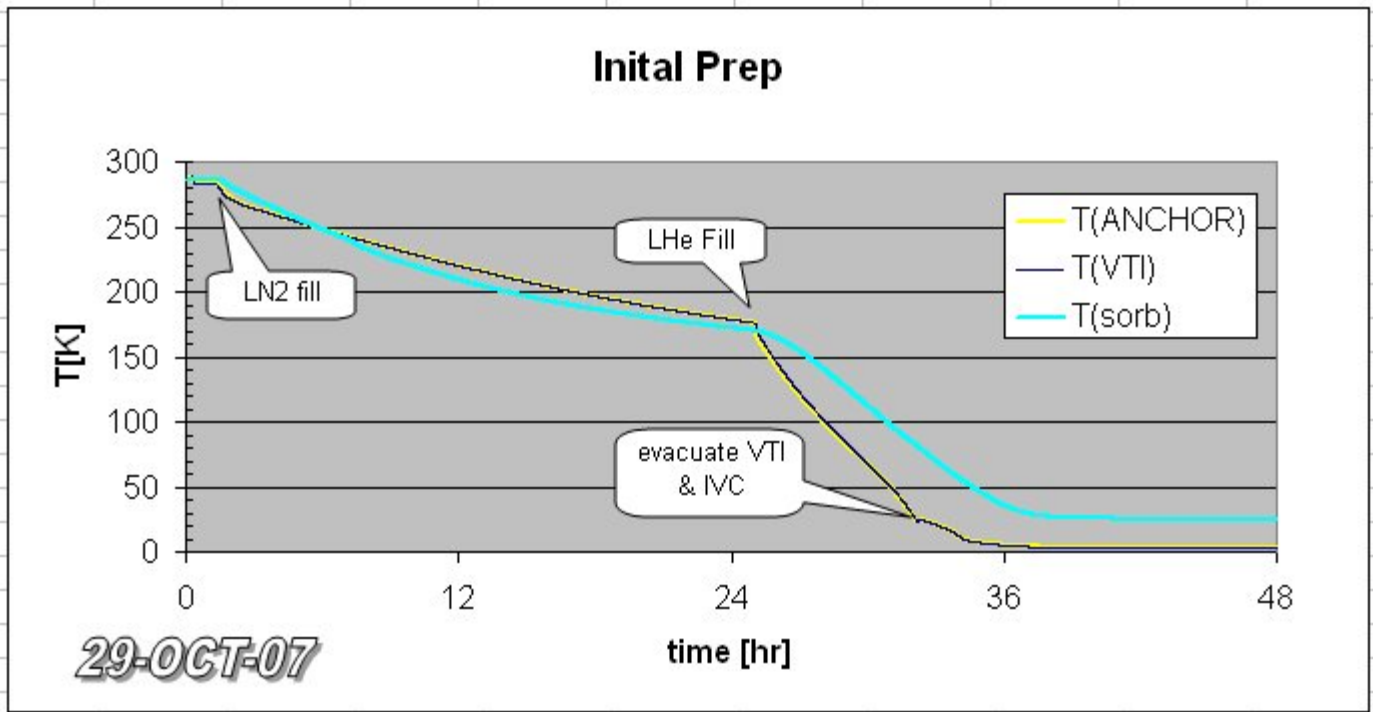


Figure 1. Sample space measurements and interface details.

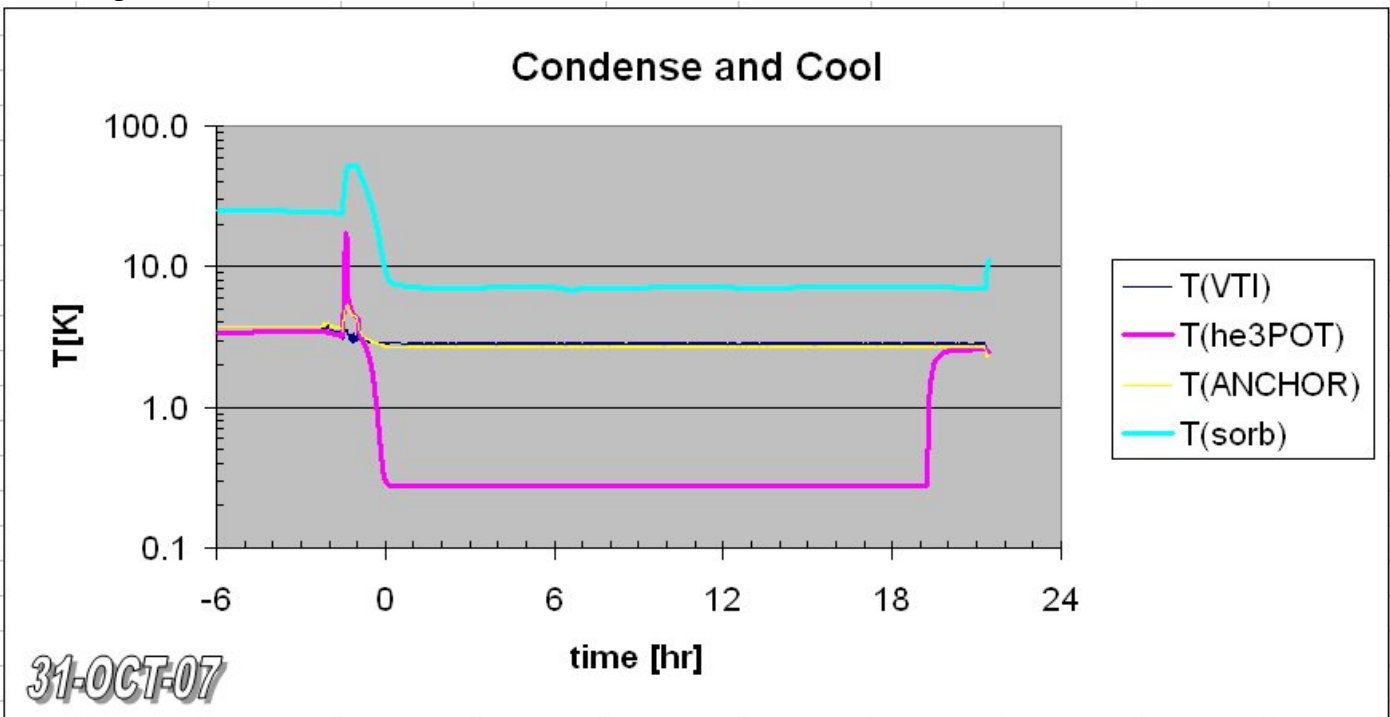
Initial Preparation:

Preparation begins 48 hours prior to base temperature operation.

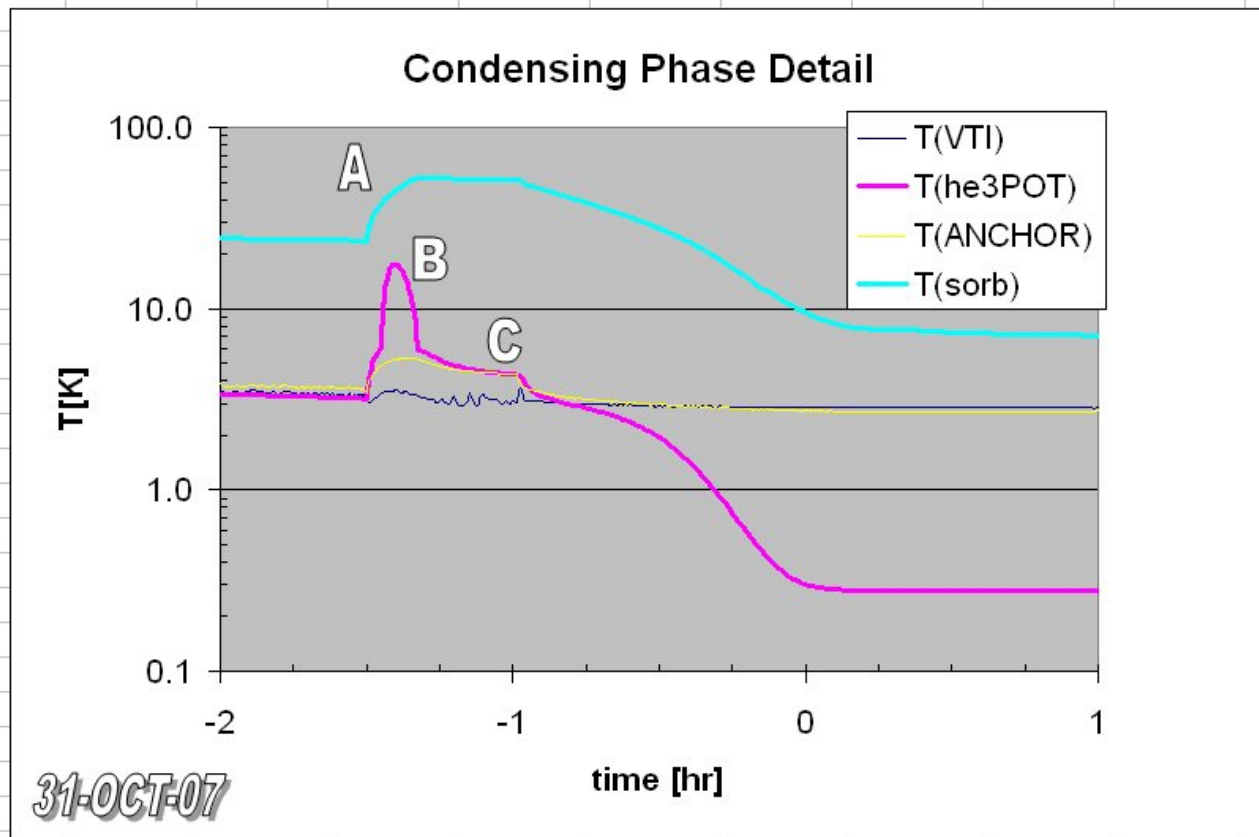


Condense and Cool

Base temperature 280mK, holds for more than 19 hours



Condensing Phase Details



- A: Sorb is heated and held at 50K for about 30 minutes (might we need longer?)
- B: 3Pot initially heats with sorb, but then begins to cool (as liquid drips down?)
- C: 3Pot equilibrates with anchor at 4.4 K (higher than expected for liquid ^3He)