**Oct.08, 2018 (manual condensing)**

P1 = 0.698 Bar.

|  |  |
| --- | --- |
| P1 (mBar) | 0 |
| P2 / P5 (mBar / mBar) | 113 / 253 |
| P4 (mBar) | 1.7 |
| T\_still (mK) | 1.54 |
| T\_mc (mK) | 97 |
| T\_cold (mK) | - |

**Oct.10, 2018 (manual condensing)**

P1 = 0.694 Bar.

|  |  |
| --- | --- |
| P1 (mBar) | 0 |
| P2 / P5 (mBar / mBar) | 103 / 233 |
| P4 (mBar) | 1.4 |
| T\_still (mK) | 938 |
| T\_mc (mK) | 62 |
| T\_cold (mK) | - |

\* Mixing chamber temperature lasted 30 min before rose up to 90 mK

**Nov. 01, 2018 (Automated condensing)**

P1 = 0.692 Bar.

|  |  |
| --- | --- |
| P1 (mBar) | 0 |
| P2 / P5 (mBar / mBar) | 130 / 210 |
| P4 (mBar) | 0.77 |
| T\_still (mK) | 926 |
| T\_mc (mK) | 56 |
| T\_cold (mK) | - |

**Nov. 06, 2018 (automated condensing)**

**10 mBar (liters) of helium-4 added to the dump.**

P1 = 0.703 Bar.

|  |  |
| --- | --- |
| P1 (mBar) | 0 |
| P2 / P5 (mBar / mBar) | 163 / 237 |
| P4 (mBar) | 0.84 |
| T\_still (mK) | 926 |
| T\_mc (mK) | 56 |
| T\_cold (mK) | - |

**Nov. 08, 2018 (automated condensing)**

**10 mBar (liters) of helium-4 added to the dump.**

P1 = 0.712 Bar.

|  |  |
| --- | --- |
| P1 (mBar) | 0 |
| P2 / P5 (mBar / mBar) | 199 / 266 |
| P4 (mBar) | 0.92 |
| T\_still (mK) | 926 |
| T\_mc (mK) | 57 |
| T\_cold (mK) | - |

**Feb. 27, 2019**

P1 = 0.711 Bar.

|  |  |
| --- | --- |
| P1 (mBar) | 22 |
| P2 / P5 (mBar / mBar) | 91 / 179 (132 / 208) |
| P4 (mBar) | 637 (686) |
| T\_still (mK) | 753 |
| T\_mc (mK) | 30 |
| T\_cold (mK) | 65 |

\*There was pressure build-up on P2, P5, P4 over 8h20m

**Feb. 28, 2019**

P1 = 0.712 Bar

|  |  |
| --- | --- |
| P1 (mBar) | 0 |
| P2 / P5 (mBar / mBar) | 88 / 216 |
| P4 (mBar) | 1.2 |
| T\_still (mK) | 938 |
| T\_mc (mK) | 52 (29) |
| T\_cold (mK) | 70 |

\*Mixing chamber temperature appears to drop when 10 mBar of mixture is removed from circulation.

**Feb. 28, 2019**

**10 mBar (liters) of helium-3 added to the dump.**

P1 = 0.722 Bar.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| P1 (mBar) | 0 | 10 | 20 | 30 |
| P2 / P5 (mBar / mBar) | 113 / 227 | 99 / 176 | 113 / 186 | 170 / 265 |
| P4 (mBar) | 1.2 | 0.59 | 0.59 | 1.2 |
| T\_still (mK) | 935 | 744 | 741 | 935 |
| T\_mc (mK) | 56 | 45 | 32 | 30 |
| T\_cold | 78 | 69 | 67 | 74 |

\*There was pressure build-up on P2, P5.

**Mar. 03, 2019**

**10 mBar (liters) of helium-3 added to the dump on Mar. 01, 2019.**

P1 = 0.722 Bar.

|  |  |  |
| --- | --- | --- |
| P1 (mBar) | 0 | 0 |
| P2 / P5 (mBar / mBar) | 653 / 692 | 551 / 575 |
| P4 (mBar) | 1.2 | 4.6 |
| T\_still (mK) | 934 | 741 |
| T\_mc (mK) | 49 | 47 |
| T\_cold | 74 | 65 |

\*100 mK cooling power measured to be 145.8 uW.

\*There was pressure build-up on P2, P5.

**Mar. 06, 2019**

**Fridge was pumped cleaned.**

**Mar. 08, 2019**

**Bellow between the nitrogen trap and helium trap is replaced.**

**Mar. 09, 2019**

P1 = 0.725 Bar.

|  |  |
| --- | --- |
| P1 (mBar) | 12 |
| P2 / P5 (mBar / mBar) | 87 / 229 |
| P4 (mBar) | 1.8 |
| T\_still (mK) | 938 |
| T\_mc (mK) | 73 |
| T\_cold (mK) | 81 |

\*Mixing chamber temperature lasted for 10 minutes before rose up to 246 mK.

**Mar. 12, 2019**

**10 mBar (liters) of helium-4 added to the circulation.**

P1 = 0.734 Bar.

|  |  |
| --- | --- |
| P1 (mBar) | 12 |
| P2 / P5 (mBar / mBar) | 84 / 182 |
| P4 (mBar) | 0.86 |
| T\_still (mK) | 764 |
| T\_mc (mK) | 38\* |
| T\_cold (mK) | 60 |

\*Mixing chamber temperature lasted for 10 minutes before rose up to 246 mK.

**Mar. 13, 2019**

**10 mBar (liters) of helium-4 added to the circulation.**

P1 = 0.744 Bar.

|  |  |  |
| --- | --- | --- |
| P1 (mBar) | 10 | 29 |
| P2 / P5 (mBar / mBar) | 85 / 201 | 76 / 165 |
| P4 (mBar) | 1.2 | 0.68 |
| T\_still (mK) | 921 | 741 |
| T\_mc (mK) | 70\* | 50 (~8h) |
| T\_cold | 79 | 63 |

\*Mixing chamber temperature lasted for 20 minutes before rose up to 250 mK.

**Mar. 13, 2019**

P1 = 0.744 Bar.

|  |  |  |
| --- | --- | --- |
| P1 (mBar) | 0 | 0 |
| P2 / P5 (mBar / mBar) | 82 / 177 | 89 / 219 |
| P4 (mBar) | 0.84 | 1.6 |
| T\_still (mK) | 689 | 896 |
| T\_mc (mK) | ~270 | ~219 |
| T\_cold | ~211 | ~167 |

\*Mixing chamber temperature lasted for 20 minutes before rose up to 250 mK.

**Mar. 15, 2019**

**10 mBar (liters) of helium-4 added to the circulation.**

P1 = 0.754 Bar.

|  |  |
| --- | --- |
| P1 (mBar) | 10 |
| P2 / P5 (mBar / mBar) | 84 / 180 |
| P4 (mBar) | 0.86 |
| T\_still (mK) | 690 |
| T\_mc (mK) | 273 |
| T\_cold | 214 |

**Mar. 16, 2019**

P1 = 0.754 Bar.

|  |  |
| --- | --- |
| P1 (mBar) | 35 - 50 |
| P2 / P5 (mBar / mBar) | 75 / 162 |
| P4 (mBar) | 0.68 |
| T\_still (mK) | 747 |
| T\_mc (mK) | 29 |
| T\_cold | 58 |

4He: Tb = 4.2 K, Tc = 2.17 K

3He: Tb = 3.2 K, Tc = 1 mK

Factory setting:

|  |  |
| --- | --- |
| P1 (mBar) | 770\* |
| P2 / P5 (mBar / mBar) | 64 / 187 |
| P4 (mBar) | 1.5\*\* |
| T\_still (mK) | ~900 |
| T\_mc (mK) | 13.3 |
| T\_cold (mK) | 57 |

\*100L dump filled with 77 liters of mixture, 16 liters of 3He, and 61 liters of 4He. 3He / 4He = 0.262, 3He / mix = 20.8%.

\*\*Number taken from a different file.