

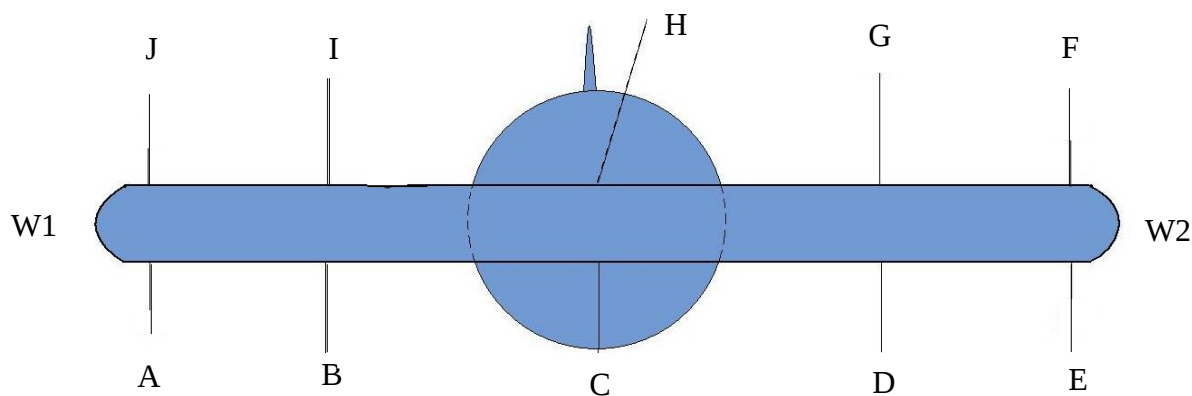
*Geometry of  $^3\text{He}$ , reference and water cells*  
*(Samantha, GMA & AQUA)*

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This report contains the results of the wall & windows thickness measurements of the  $^3\text{He}$  cell (Samantha), the reference cell (GMA) and the water cell (AQUA). Furthermore, the diameter measurement's results are also summarized at the end.

The  $^3\text{He}$  cell measurements have been done using the following convention for the cell's orientation and position; where W1 (W2) are the upstream (downstream) windows\*:



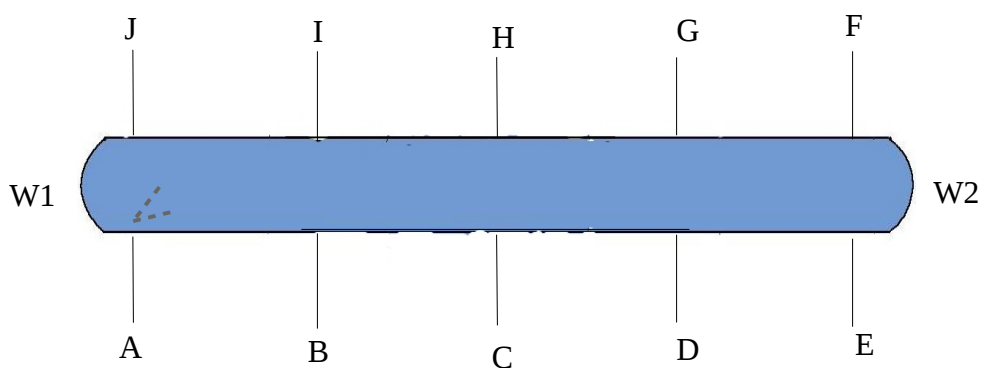
The first table summarizes the measurement's results of the  $^3\text{He}$  cell.

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\* This convention manifests the real cell orientation during the running period.

<i><sup>3</sup>He cell: Samantha</i>		
Meas. Points	Position (cm)	Thickness (mm)
W1	-	0.121
A	2.5 (W1-> A)	1.563
B	12.5 (W1-> B)	1.556
C	20.3 (W1-> C)	1.75
D	25.4 (W1-> D)	1.7
E	35.6 (W1-> E)	1.7
W2	-	0.125
F	2.5 (W2-> F)	1.7
G	11.4 (W2-> G)	1.67
H	19.1 (W2-> H)	1.671
I	26.7 (W2-> I)	1.614
J	35.6 (W2-> J)	1.678

The same convention was used on the wall and windows thickness measurements of the reference cell (GMA). With regard to the small etching on the cell's glass; near A position, the cell was positioned to have W1 (W2) on the upstream (downstream) side\*\*.



The second table shows the measurement's results of the GMA cell:

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\*\* Cell's cartoon shows the real orientation during the running period.

<i>Reference cell: GMA</i>		
<i>Meas. Points</i>	<i>Position (cm)</i>	<i>Thickness (mm)</i>
W1	-	0.129
A	2.5 (W1-> A)	1.806
B	12.5 (W1-> B)	1.692
C	20.3 (W1-> C)	1.738
D	23.4 (W1-> D)	1.75
E	36.4 (W1-> E)	1.731
W2	-	0.134
F	3 (W2-> F)	1.716
G	9 (W2-> G)	1.68
H	20 (W2-> H)	1.637
I	28.4 (W2-> I)	1.657
J	37.4 (W2-> J)	1.7

The third table shows the thicknesses of the water cell (AQUA).

<i>Water cell: AQUA</i>	
<i>Meas. Points</i>	<i>Thickness (mm)</i>
A	-
B	1.5
C	1.53
D	1.486
E	1.428
F	1.403
G	1.503
H	1.499
I	1.569
J	1.941

- Diameter measurement for Samantha and AQUA Cells:

The diameter's measurements for Samantha cell were done by taking five consecutive measurements in each point's zone, and the final diameter's value was averaged over them. However, the extraction of the water cell's diameter was done by taking only one measurement in different points along the cell.

<sup>3</sup> He Cell: Samantha					
Points	M1 (mm)	M2 (mm)	M3 (mm)	M4 (mm)	M5 (mm)
A	19.25	19.2	19.15	19.18	19.23
B	19.05	18.8	18.72	18.8	18.72
C	18.77	18.67	18.7	18.67	18.67
D	18.75	18.67	18.72	18.67	18.72
E	18.8	19	19.13	19.13	19.05
Average Diameter is: 18.95 ± 0.537 mm					

Water Cell: AQUA										
Points	A	B	C	D	E	F	G	H	I	J
Diam. (mm)	18.62	18.77	19	18.95	19.66	18.62	18.77	19	18.95	19.66
Average Diameter is: 19 ± 0.376 mm										