

## HPS ECals positions

### Theoretical values (mm) relative to theoretical pair spectrometer center

	X (horizontal axis)	Y (vertical axis)	Z ( beam axis)
Calorimeter Top			
CTOP_A	386,12	230,79	-933,73
CTOP_B	386,12	230,79	-1083,73
CTOP_C	-428,88	230,79	-933,73
CTOP_D	-428,88	230,79	-1083,73
Calorimeter Bot			
CBOTT_A	386,12	-230,93	-933,73
CBOTT_B	386,12	-230,93	-1083,73
CBOTT_C	-428,88	-230,93	-933,73
CBOTT_D	-428,88	-230,93	-1083,73

### Measured values (m) by the survey

	X (horizontal axis)	Y (vertical axis)	Z ( beam axis)
Calorimeter Top			
CTOP_A	-80,30201	103,5885	-418,69392
CTOP_B	-80,30234	103,58861	-418,84387
CTOP_C	-81,11726	103,58846	-418,6933
CTOP_D	-81,11776	103,58852	-418,84334
Calorimeter Bot			
CBOTT_A	-80,30091	103,12316	-418,69211
CBOTT_B	-80,30433	103,12287	-418,84097
CBOTT_C	-81,11808	103,12422	-418,68965
CBOTT_D	-81,11847	103,12396	-418,83975
Pair Spectrometer measured (m)	-80,68805	103,3545	-417,75641
Pair spectrometer chamber	-80,6885	103,35473	
DS Center measured (m)			

**Calculated values (from measured values, the vacuum chamber is probably 1 mm up)**

	X Calorimeter -X pair spectrometer chamber down stream center (mm)	Y Calorimeter - Y pair spectrometer chamber down stream center (mm)	Z Calorimeter- Z Pair spectrometer (mm)
Calorimeter Top			
CTOP_A	386,49	233,77	-937,51
CTOP_B	386,16	233,88	-1087,46
CTOP_C	-428,76	233,73	-936,89
CTOP_D	-429,26	233,79	-1086,93
Calorimeter Bot			
CBOTT_A	387,59	-231,57	-935,7
CBOTT_B	384,17	-231,86	-1084,56
CBOTT_C	-429,58	-230,51	-933,24
CBOTT_D	-429,97	-230,77	-1083,34

