



# Jefferson Lab Alignment Group

## Data Transmittal

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**FROM:** Kelly Tremblay      **Checked:** CJC      **# :** C1069

**DETAILS:** data: step2b\bsy\bsy9c\060307a, 2b\bsy\bsy10c\060706a & 2b\hallc\gzero\060717a + field notes

Below are the results for the final survey of the line C components prior to running the GZero Backwards Angle experiment. The surveys were carried out March 7<sup>th</sup> (IPM3C20A only), June 6<sup>th</sup> and July 13<sup>th</sup>/17<sup>th</sup>, 2006.

The deltas dx, and dy are in the beam following coordinate system (bfs) with units in millimeters. A +x value is to the beam left and +y is higher than ideal. The horizontal distance to the hall center (nominal target) is also shown in meters with a negative value being upstream, and a positive value downstream of the center. Where relevant, encoder readings are given.

Component	Dist Hall Center (m)	dx (mm)	Harp encoder	dy (mm)	Harp encoder
IPM3C20A	-17.643	-0.58		-0.37	
IPM3H00	-6.710	-0.82		-0.29	
IPM3H00A	-3.25	0.09		0.45	
IHA3H00	-3.01	0.05	(653A)	0.36	(A70B)
IPM3H00B	-2.31	-0.06		0.32	
IPM3H00BB	-2.05	0.46		0.54	
ITV3H00	-1.81	0.01		0.20	
IHA3H00A	-1.60	0.24	(6B38,E100)	0.69	(9DF4)
IPM3H00C	-1.34	0.48		0.43	
IBC3H00	n/a	0.15		0.19	
VBV3H00B	n/a	0.58		-0.63	
Hall Cent	0.00				
Flange1	n/a	-1.18		0.23	
Flange2	8.688	0.31		-1.21	
IHM3HG0	10.734	0.43		0.54	
IBC3HG0	12.223	0.82		-0.01	

The following points on the GZero Superharp data are derived from a March 13<sup>th</sup>, 2006 survey. See note below.

IPM3HG0A	13.205	0.07		-0.60	
IHA3HG0	13.460	-0.12	(65C8,DEE8)	-0.39	(9D4D)
IOR3HG0	15.263	2.22		-1.85	
IHA3HG0A	15.505	-0.25	(7E5E,F2BA)	0.56	(ABFA)
IPM3HG0B	15.754	-0.35		-0.27	
Flange3	16.050	-2.18		-4.13	

Halo Monitor IHM3HG0 encoder values are shown below:

6.03Ø : 5.831 Ω : 10.88 Ø : 4.206 Ω

Flange1 is up stream of the new shielding wall; Flange 2 is 1<sup>st</sup> flange downstream of the shielding wall; Flange3 is the downstream flange on GZero diagnostic girder. The diagnostics on the superharp girder z values are based on previous surveys (Memo C1048). A n/a (not available) notation for the distance from hall center value indicates that no measurement was made.

The Ferris Wheel, SMS and GZero Back target were also located. The measurements are based on the ideal fiducialized center or the components, and their as-found locations. The hall center distance, dx, dy units are as above. Yaw pitch and roll angles (units decimal degrees) are also shown and are based on the overall CEBAF coordinate system.

<b>Component</b>	<b>Dist Hall Center (m)</b>	<b>dx (mm)</b>	<b>dy (mm)</b>	<b>Yaw (deg)</b>	<b>Pitch (deg)</b>	<b>Roll (deg)</b>
Ferris	19.437	-1.04	-0.49	-142.509	0.015	0.010
SMS	22.271	0.09	-0.26	-142.459	0.008	0.005
GZero Target	22.462	4.59	-1.90	-142.331	0.310	-0.637

Note on GZero superharp girder: The equipment listed on page 1, IPM3HG0A, IHA3HG0, IOR3HG0, IHA3HG0A, IPM3HG0B, and Flange 3 were originally located relative to the girder's tooling balls on March 13<sup>th</sup>, 2006. As it is assumed that the equipment on the girder did not move, the girder's tooling balls were again surveyed during the July 13<sup>th</sup> /17<sup>th</sup> surveys. A transformation was then used to derive the current location for the girder's equipment .