



Jefferson Lab Alignment Group

Data Transmittal

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DATE: 11/26/2019

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The data below shows the GEM detectors in the center, beam left, beam right and also repeated measurements for each position. The ideal value is the location the alignment group has in their records and is shown for reference.

The positions are shown in the CEBAF coordinate system (meters) and also in the beam following system (BFS). The BFS coordinates are as follows: a positive dx is to the left from the design beamline (looking downstream); a positive dy is vertical from the design **position**; a positive dz is downstream along design beam from ideal. For angular data: Yaw is a positive counter-clockwise about the Y axis; Pitch is positive counter clockwise about the X axis; dRoll is positive about the Z axis. BFS units are millimeters and decimal degrees.

GEM Position	Cebaf Coordinates [meters]			Beam Following [mm]			Angular data [degrees]		
	X[m]	Y[m]	Z[m]	dx[mm]	dy[mm]	dz[mm]	yaw	pitch	roll
Center	80.59679	103.96062	403.82103	-3.21	-35.78	-87.07	0.3103	-0.1495	-0.2538
Center-repeat	80.59695	103.96033	403.82121	-3.05	-36.07	-86.89	0.3108	-0.1811	-0.2590
BeamLeft	80.97643	103.95766	403.82225	376.43	-38.74	-85.85	0.3650	-0.5056	-0.1601
BeamLeft-repeat	80.97676	103.95753	403.82240	376.76	-38.87	-85.70	0.3848	-0.5280	-0.1593
BeamRight	80.20974	103.95743	403.82160	-390.26	-38.98	-86.50	0.2369	-0.5778	-0.2232
BeamRight-repeat	80.20980	103.95745	403.82168	-390.20	-38.96	-86.42	0.2421	-0.5776	-0.2249
Ideal	80.60000	103.99640	403.90810				0.0000	0.0000	0.0000

The data below shows the GEM detectors position relative to the Fiber Glass Panel. Negative Z indicates the position of the detectors upstream Fiber Glass Panel, represented in millimeters.

	Z [mm]
Plane_1	-282.2
Plane_2	-417.7
Plane_3	-446.8