



Jefferson Lab Alignment Group

Data Transmittal

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Checked: rtm

: D2009

DETAILS:

m:\align\DATA\Inspection\HallID\211006A

Below are the results of the mRICH inspection survey.

Project: mRICH Survey

Date: 10/6/2021

Coordinate System Construction: Z Axis (primary) defined by a line created using the average position of the PCB mounting screws for GEM Tracker 1 and GEM Tracker 3. Rotation around Z Axis (roll) is controlled by an average plane constructed using the top PCB mounting screws (plane 1) and bottom PCB mounting screws (plane 2) for GEM Tracker 1 and GEM Tracker 3. Origin is the average of the PCB mounting screws of GEM Tracker 1 at the PCB board. Positive Z is direction of beam, positive Y is up, positive X is beam left. All units in millimeters (mm).



PCB Board

PCB Mounting Screw (Typ)

GEM Tracker 3

GEM Tracker 1

mRICH

Mounting Plate



GEM Tracker 1			
Description	X	Y	Z
PCB Mounting Screw (Top Right)	-99.84	100.04	-0.45
PCB Mounting Screw (Top Left)	100.13	99.87	0.63
PCB Mounting Screw (Bottom Right)	-	-	-
PCB Mounting Screw (Bottom Left)	100.18	-99.66	-0.63
PCB Mounting Screw (Bottom Left)	99.90	100.25	0.45
PCB (Center)	0.00	0.00	0.00
Mounting Plate Screw (Top Right)	-123.8	139.51	7.12
Mounting Plate Screw (Top Left)	123.96	139.13	8.55
Mounting Plate Screw (Bottom Right)	-	-	-
Mounting Plate Screw (Bottom Right)	124.03	-139.1	7.03
Mounting Plate Screw (Bottom Left)	123.61	139.17	8.46
Mounting Plate (Center)	-0.07	0.09	7.79

GEM Tracker 3			
Description	X	Y	Z
PCB Mounting Screw (Top Right)	-	-	-
PCB Mounting Screw (Top Right)	100.15	99.70	140.69
PCB Mounting Screw (Top Left)	99.94	100.15	142.39
PCB Mounting Screw (Bottom Right)	-	-	-
PCB Mounting Screw (Bottom Right)	-99.92	100.08	140.17
PCB Mounting Screw (Bottom Left)	100.12	-99.78	141.87
PCB (Center)	0.00	0.00	141.28
Mounting Plate Screw (Top Right)	-	-	-
Mounting Plate Screw (Top Right)	124.22	139.44	148.45
Mounting Plate Screw (Top Left)	123.60	139.62	150.59
Mounting Plate Screw (Bottom Right)	-	-	-
Mounting Plate Screw (Bottom Right)	123.90	139.33	147.82
Mounting Plate Screw (Bottom Left)	-	-	-
Mounting Plate Screw (Bottom Left)	123.85	138.96	149.96
Mounting Plate (Center)	-0.17	0.19	149.21

mRICH			
Description	X	Y	Z
Center of Upstream Face	-3.42	-3.75	274.16
Center of Downstream Face	-1.08	-1.28	479.13

Calibration Rule Center Locations			
Description	X	Y	Z
Gem Tracker 1 Calibration Rule	-0.22	153.28	26.29
Upstream mRICH Calibration Rule	-2.26	91.61	338.19
Downstream mRICH Calibration Rule	-1.06	92.93	438.63

Beamline Distance Measurements		
From	To	Z Dimension
Gem Tracker 1 (PCB)	Gem Tracker 1 (Mounting Plate)	7.79
Gem Tracker 1 (PCB)	Gem Tracker 2 (PCB)	141.28
Gem Tracker 2 (PCB)	Gem Tracker 2 (Mounting Plate)	7.92
Gem Tracker 2 (PCB)	mRICH Upstream Face	132.88
Photosensor Gap Dimension Measurements		
Top Beam Left	Top Beam Right	3.57
Top Beam Left	Bottom Beam Left	3.28
Top Beam Right	Bottom Beam Right	3.88
Bottom Beam Left	Bottom Beam Right	3.43

