

LCLS II 1.085Q4.31 Fiducialization Report



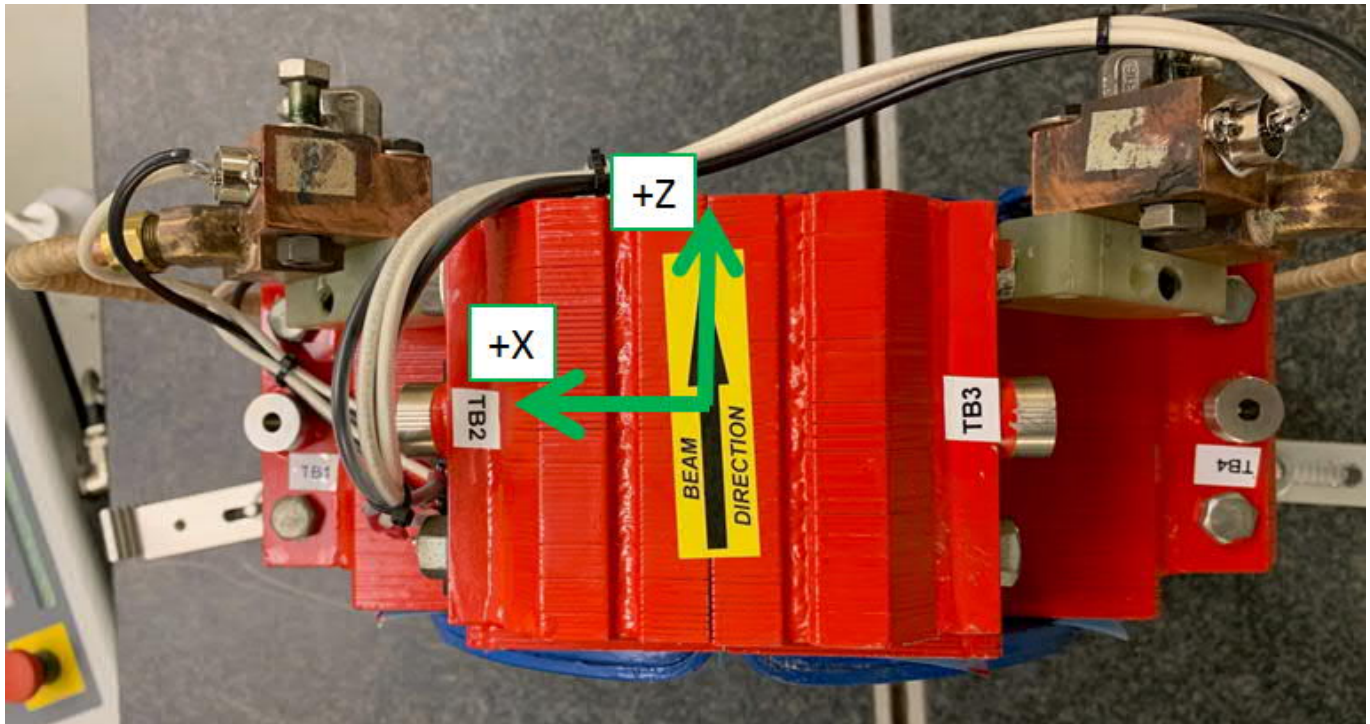
Inspector : K. Caban
Engineer : A. Ibrahimov
Drawing No. : SA-902-675-01
Barcode # : 4249
Mfg. S/N : E008

Coordinate System Setup

Spatial Alignment

The Spatial Alignment of the magnet is created through a composite best-fit of the pole tips. Each pole tip scanned 0.100 inch inboard from the upstream magnet face and the downstream magnet face. A composite best-fit of the upstream poles and the downstream poles is made with the nominal pole tip shape and location. An axis is created through the two best-fit centerpoints. This axis is the spatial alignment of the magnet and defines the Z axis.

Tooling Ball Locations



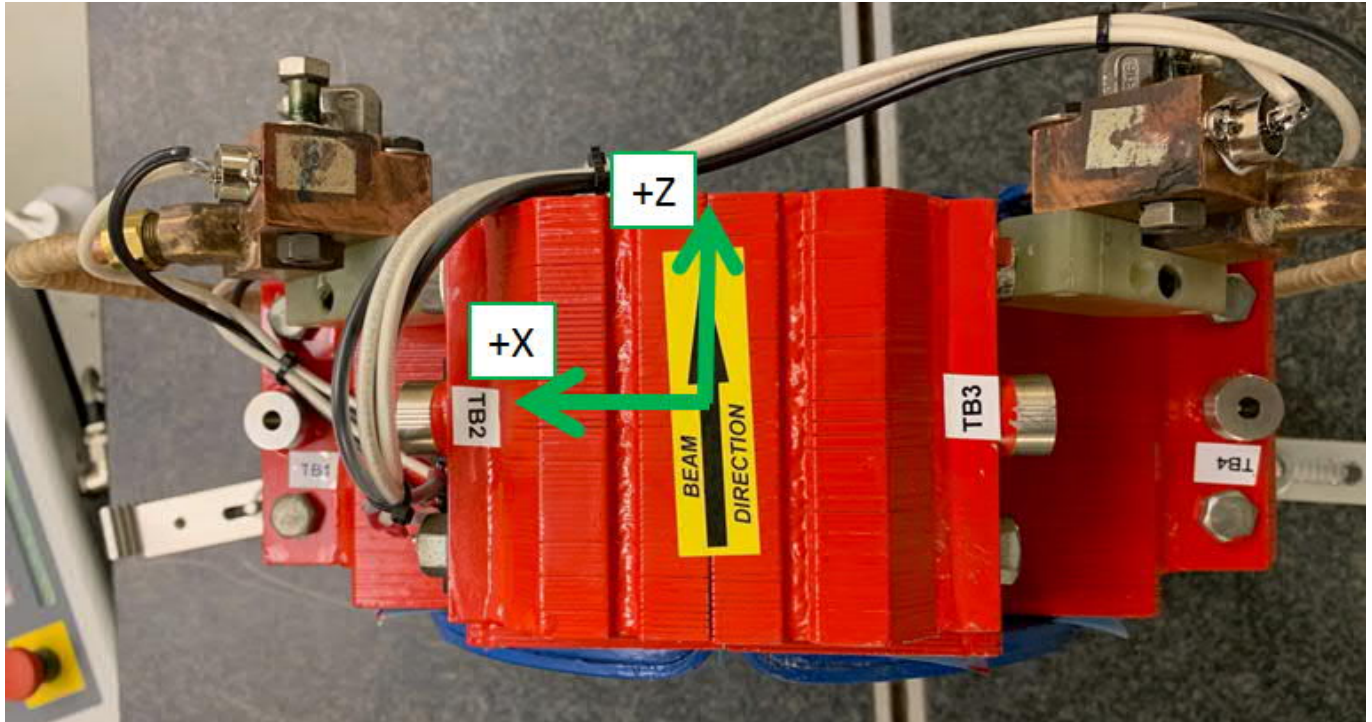
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	5.8554	4.0045	0.2432
TB 2	3.9957	5.8485	0.2593
TB 3	-4.0061	5.8456	0.2662
TB 4	-5.8415	3.9975	0.2707

Tooling Ball Locations are 1 inch above Tooling Ball Adapter Plane
Dimensions in Inch

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Tooling Ball Locations



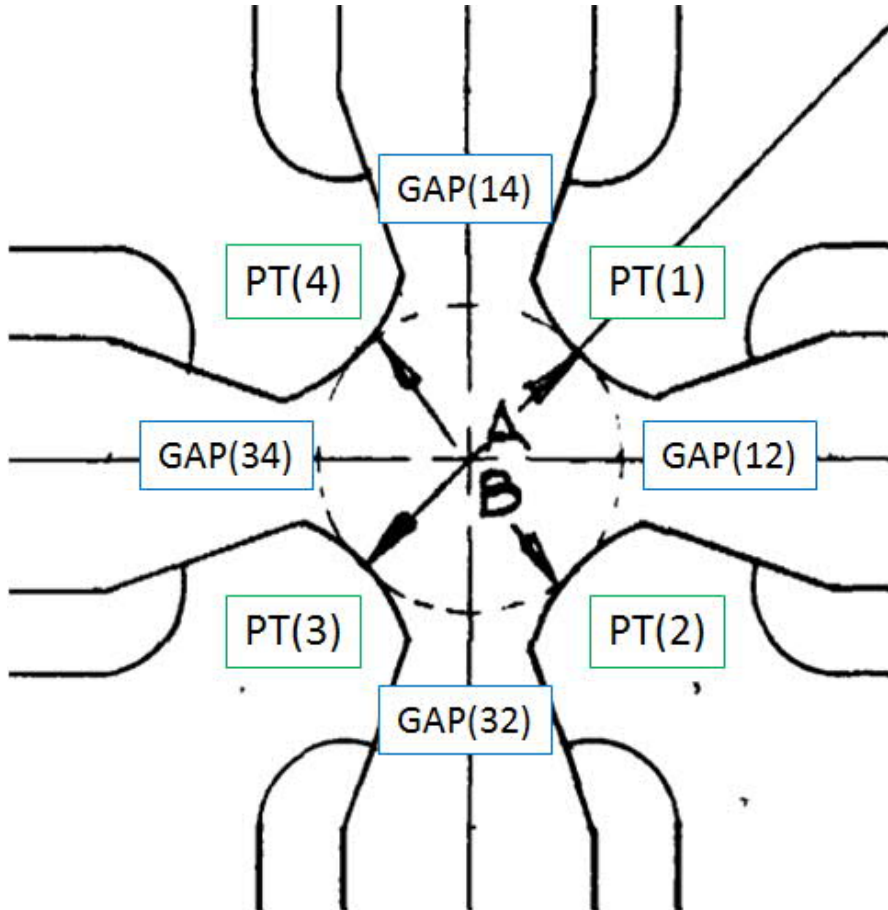
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	5.8557	3.3171	0.2433
TB 2	3.3079	5.8458	0.2566
TB 3	-3.3156	5.8479	0.2661
TB 4	-5.8401	3.3098	0.2684

Tooling Ball Locations are 5/16 inch above Tooling Ball Adapter Plane
Dimensions in Inch

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Pole Tip Gap Measurements



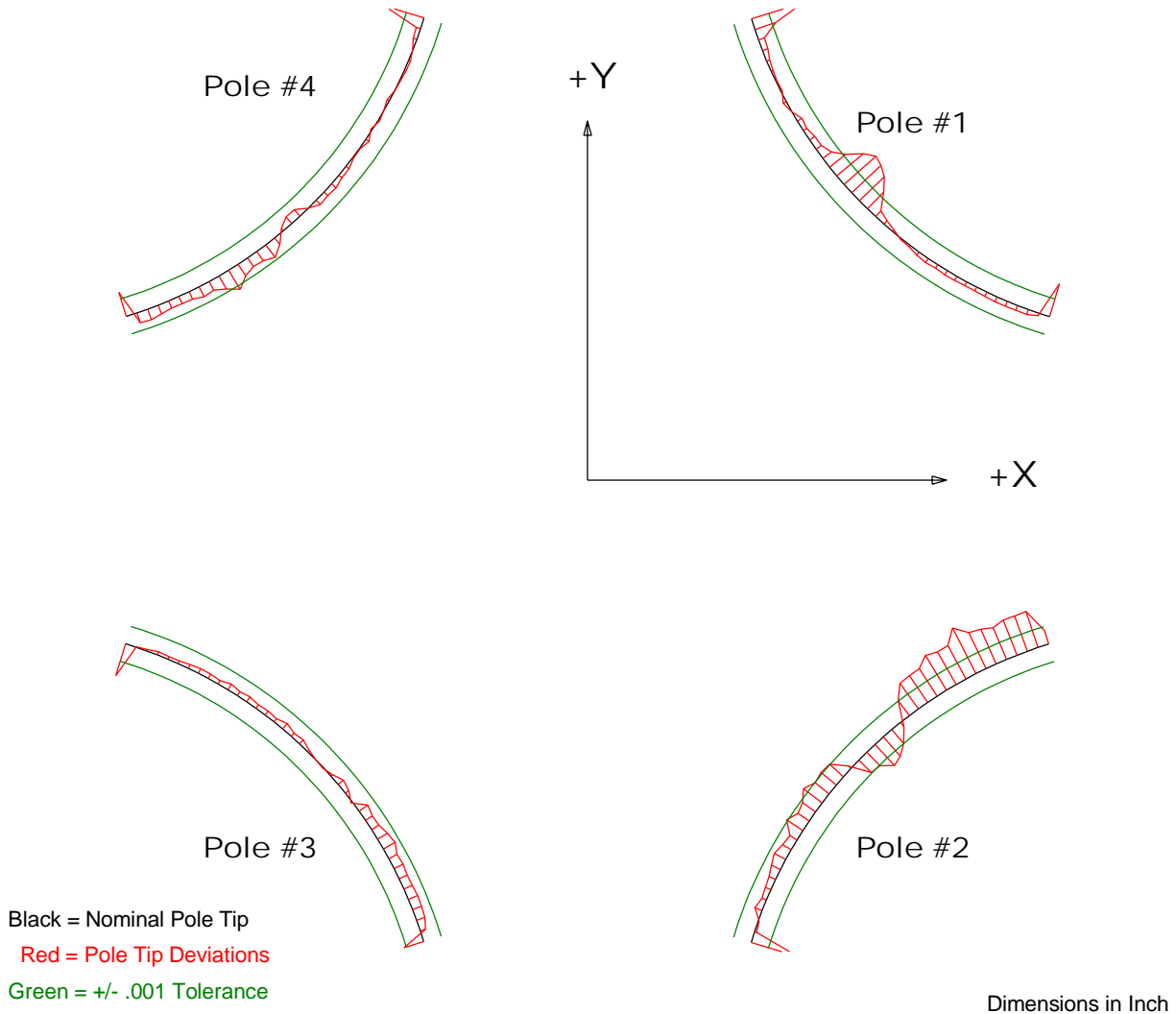
	Nominal Distance	Downstream Pole End	Upstream Pole End
PT Distance 1-3(A)	1.085	1.08611	1.08554
PT Distance 2-4(B)	1.085	1.08543	1.08794
Gap 1-2	0.4546	0.45652	0.46013
Gap 2-3	0.4546	0.45909	0.45823
Gap 3-4	0.4546	0.45871	0.46064
Gap 4-1	0.4546	0.46057	0.46149

Dimensions in Inch

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Composite Best-fit of Pole Tips, Downstream



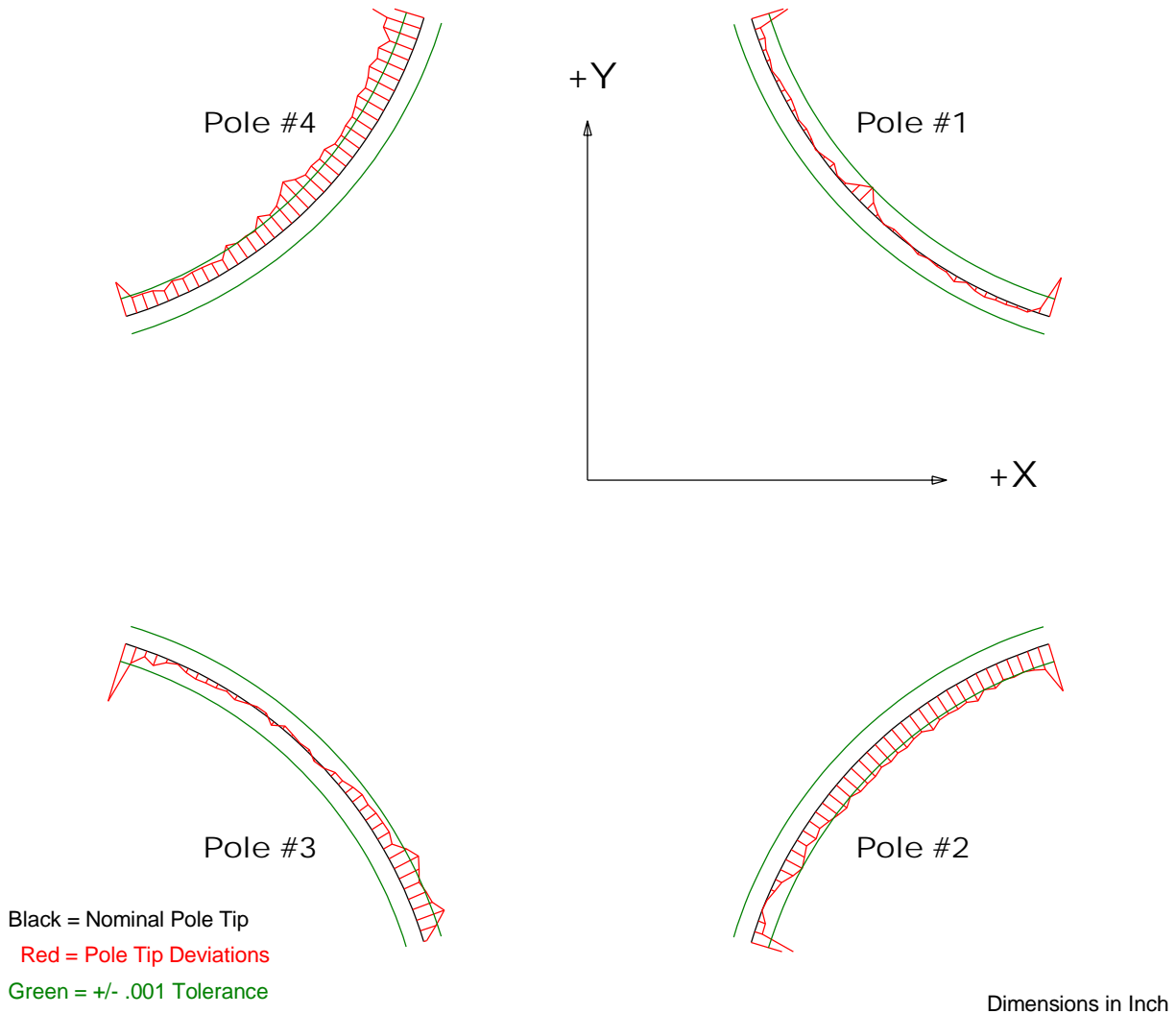
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.00294	-0.00267	-0.00182	-0.00226
Max. Dev.	0.0003	0.00282	0.00073	0.00123

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Composite Best-fit of Pole Tips, Upstream



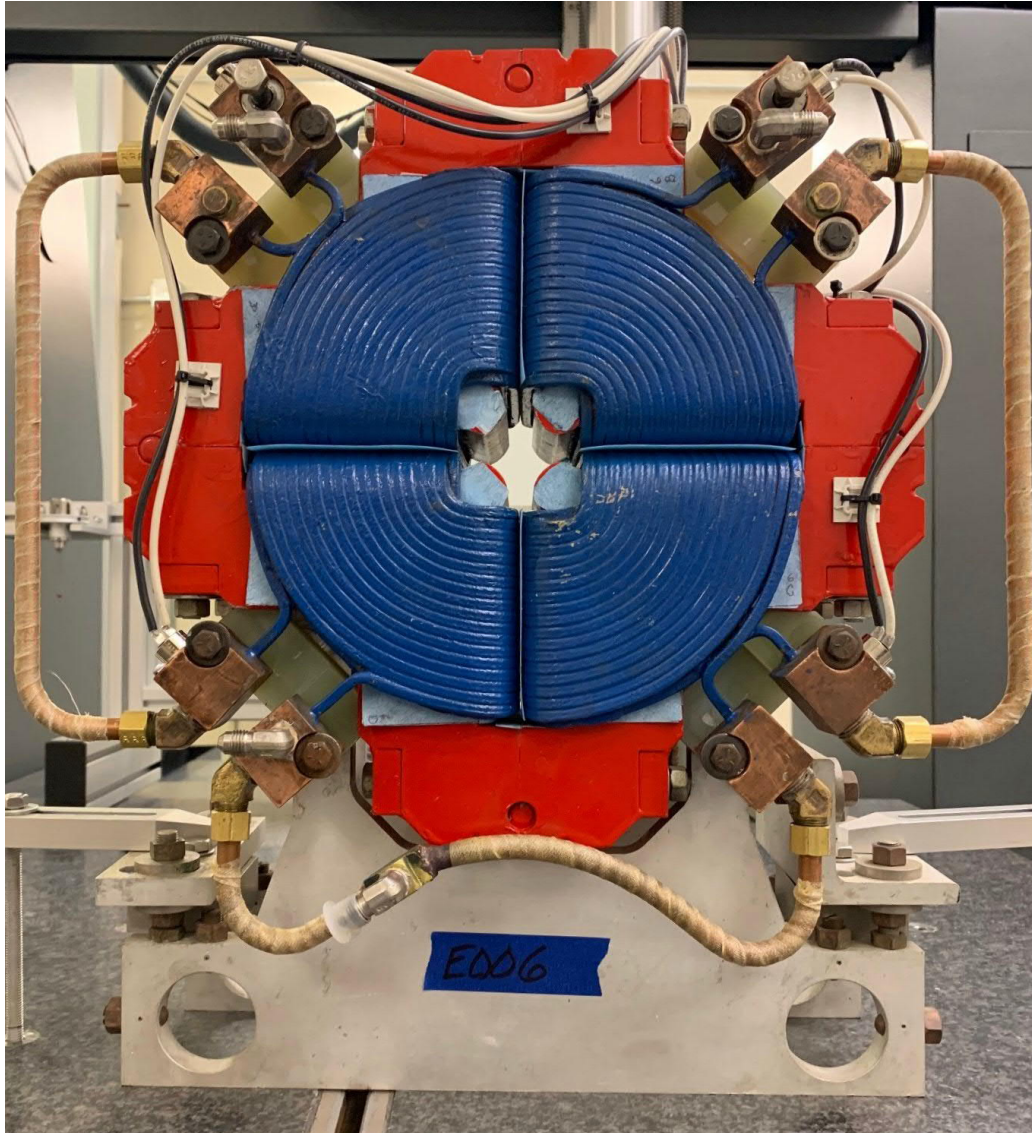
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.00231	-0.00318	-0.00328	-0.00428
Max. Dev.	0.00033	0	0.00162	-0.0006

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Angle of the Composite Pole Tip Best-Fit



Angle in Decimal Degrees ° :-0.03414

Angle in Milliradians :-0.59586

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