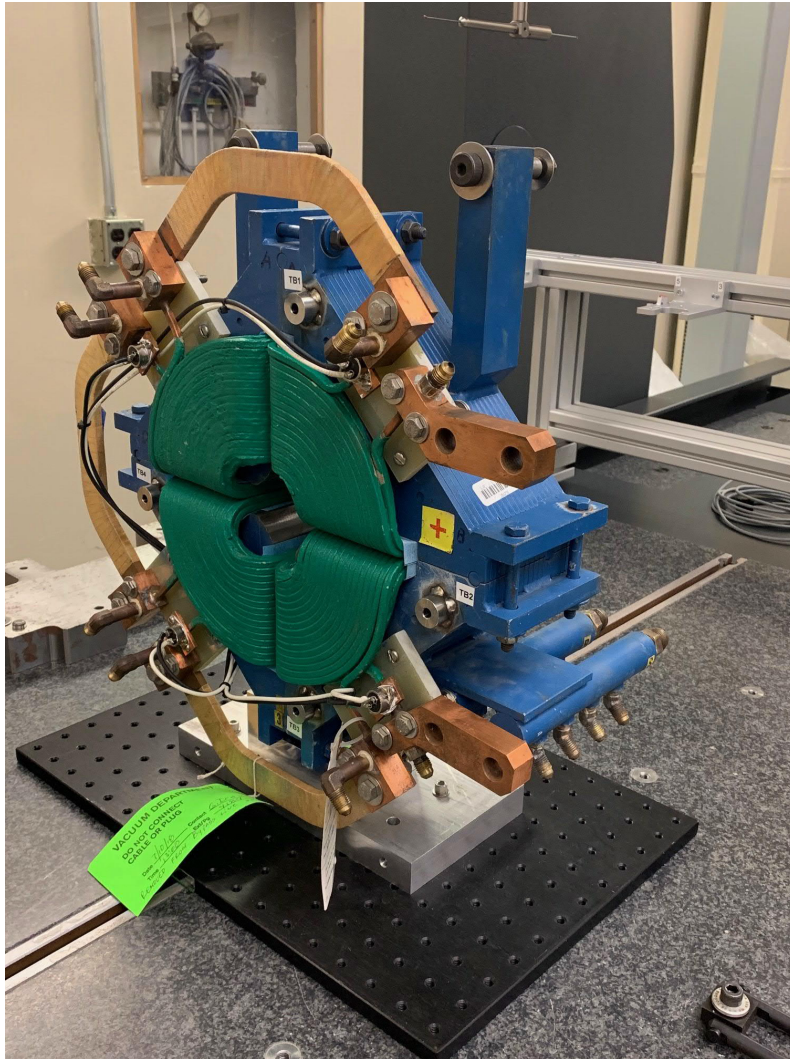


## LCLS II 2Q4W Fiducialization Report



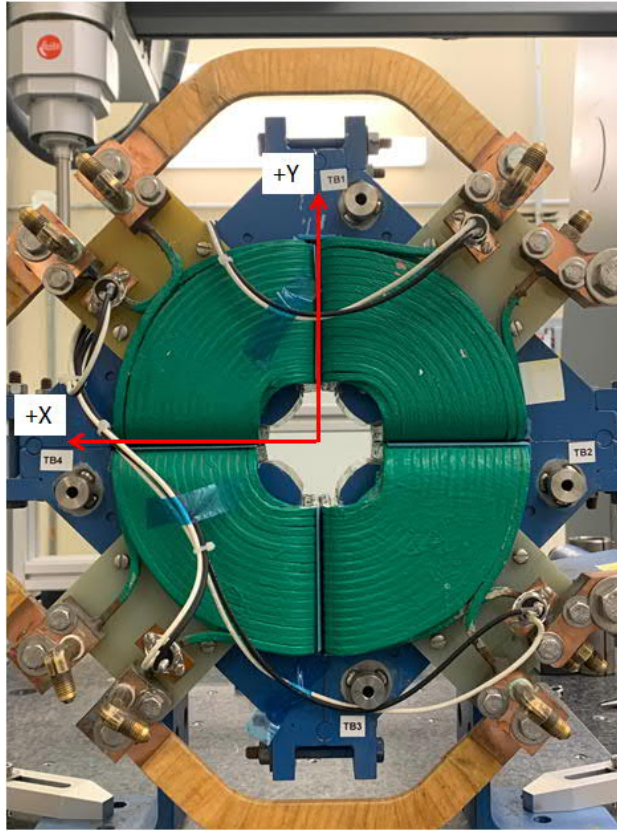
Inspector : K. Caban  
Engineer : J. Amann  
Drawing No. : SA-344-112-08  
Barcode # : 4238  
Mfg. S/N : #34

## 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 0.150 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



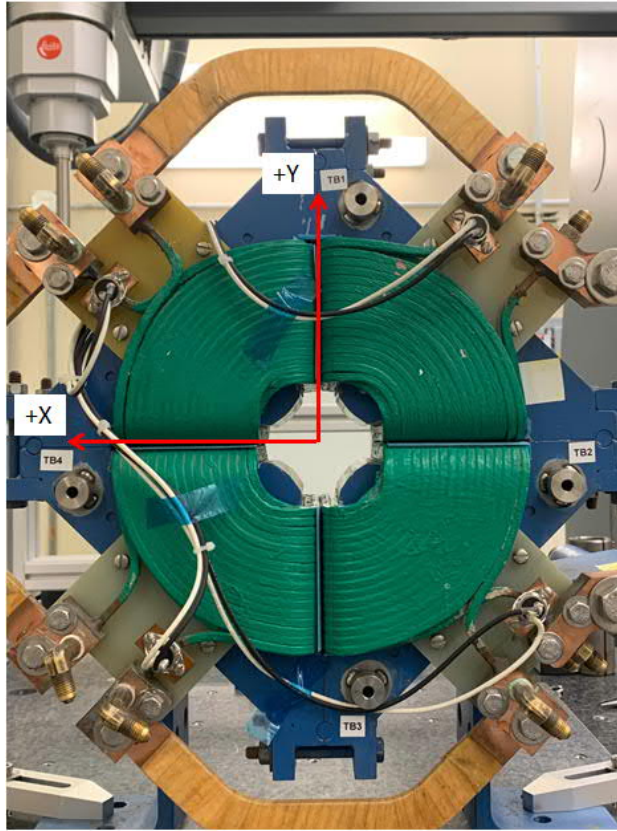
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	-0.9819	5.5123	-3.4376
TB 2	-5.5044	-1.0014	-3.4422
TB 3	-0.9653	-5.5036	-3.4395
TB 4	5.5074	-1.0210	-3.4457

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

Barcode # : 4238

Mfg. S/N : #34

## Tooling Ball Locations



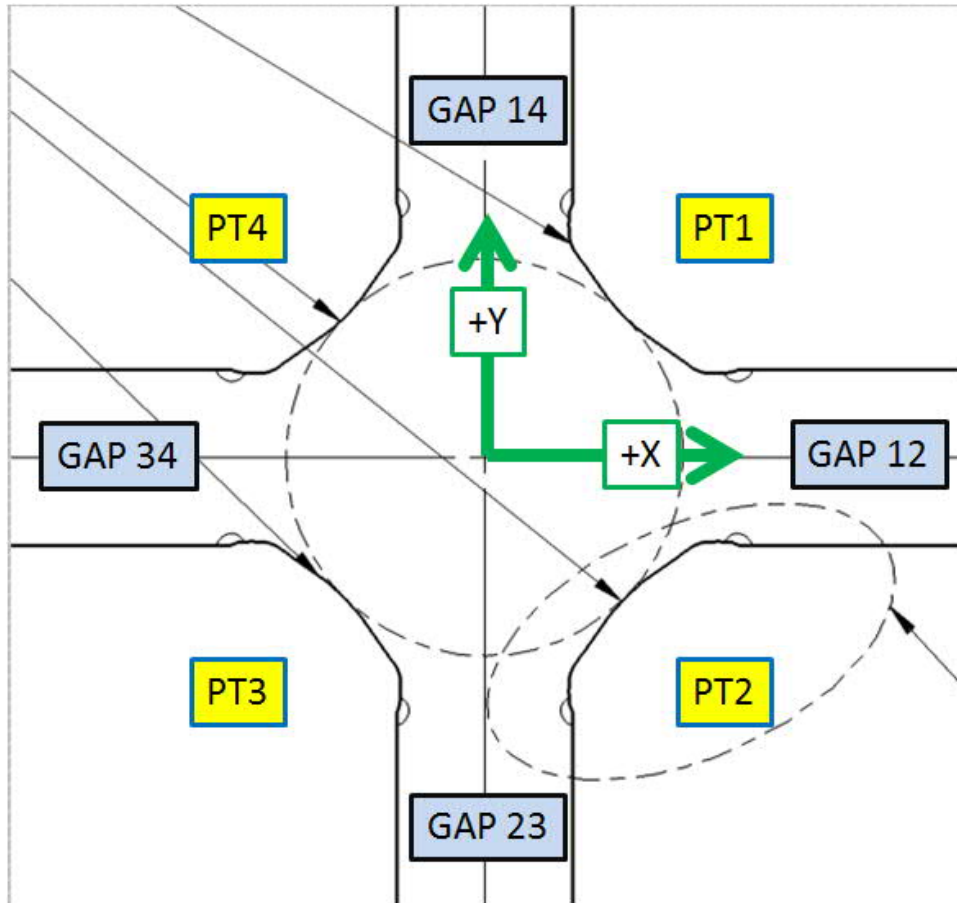
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	-0.9834	5.5110	-2.7493
TB 2	-5.5019	-0.9981	-2.7542
TB 3	-0.9667	-5.4990	-2.7512
TB 4	5.5057	-1.0191	-2.7581

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

Barcode # : 4238

Mfg. S/N : #34

## Pole Tip Gap Measurements



	Nominal Distance	Downstream Pole End	Upstream Pole End
PT Distance 1-3	2.026	2.03	2.0261
PT Distance 2-4	2.026	2.0281	2.0273
Gap 1-2	0.8602	0.8522	0.8548
Gap 2-3	0.8602	0.8723	0.8649
Gap 3-4	0.8602	0.853	0.8593
Gap 1-4	0.8602	0.8677	0.8618

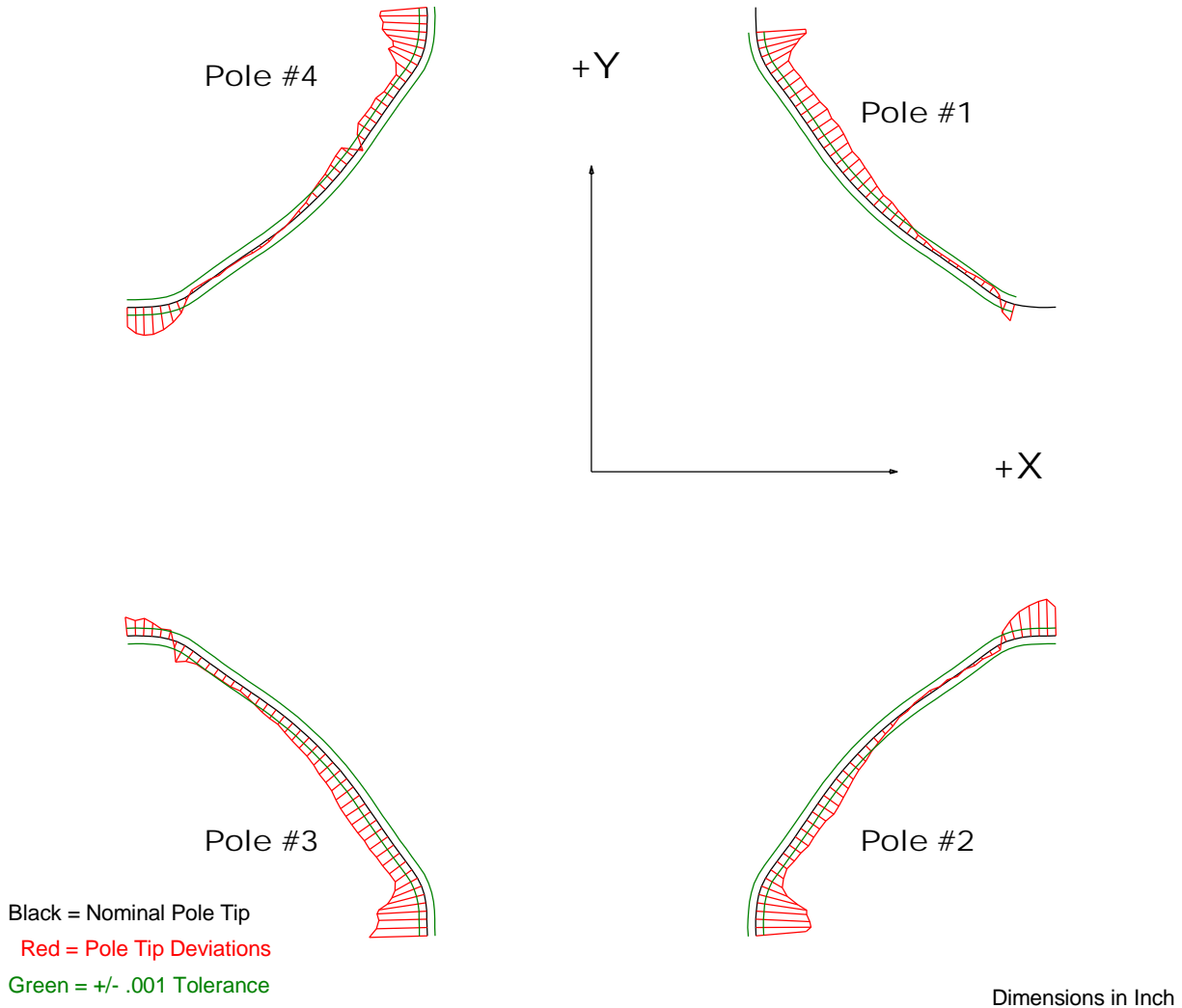
Dimensions in Inch

Barcode # : 4238

Mfg. S/N : #34



## Composite Best-fit of Pole Tips, Downstream



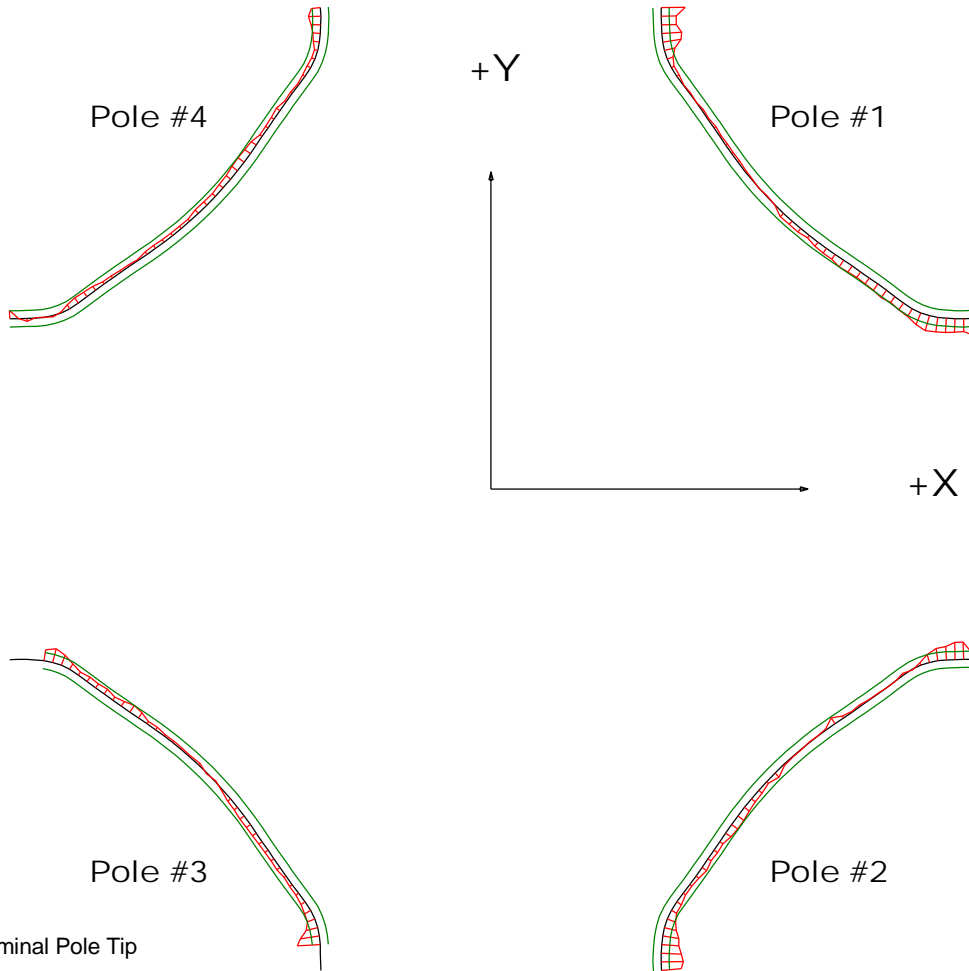
### Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.0064	-0.0071	-0.0075	-0.0061
Max. Dev.	0.0022	0.0047	0.0025	0.0036

Barcode # : 4238

Mfg. S/N : #34

## Composite Best-fit of Pole Tips, Upstream



Black = Nominal Pole Tip  
 Red = Pole Tip Deviations  
 Green = +/- .001 Tolerance

Dimensions in Inch

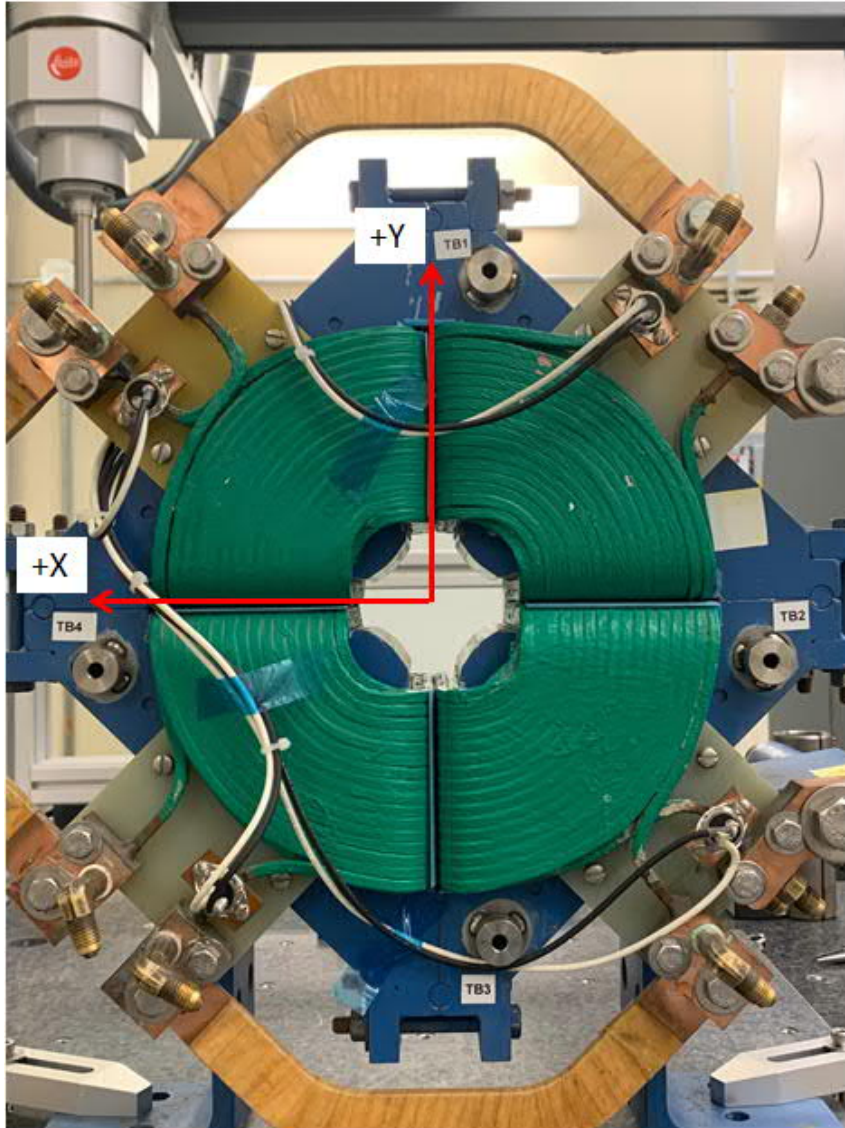
### Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.003	-0.0028	-0.0028	-0.0015
Max. Dev.	0.0021	0.0022	0.0017	0.0004

Barcode # : 4238

Mfg. S/N : #34

## Angle of the Composite Pole Tip Best-Fit



in Decimal Degrees ° :