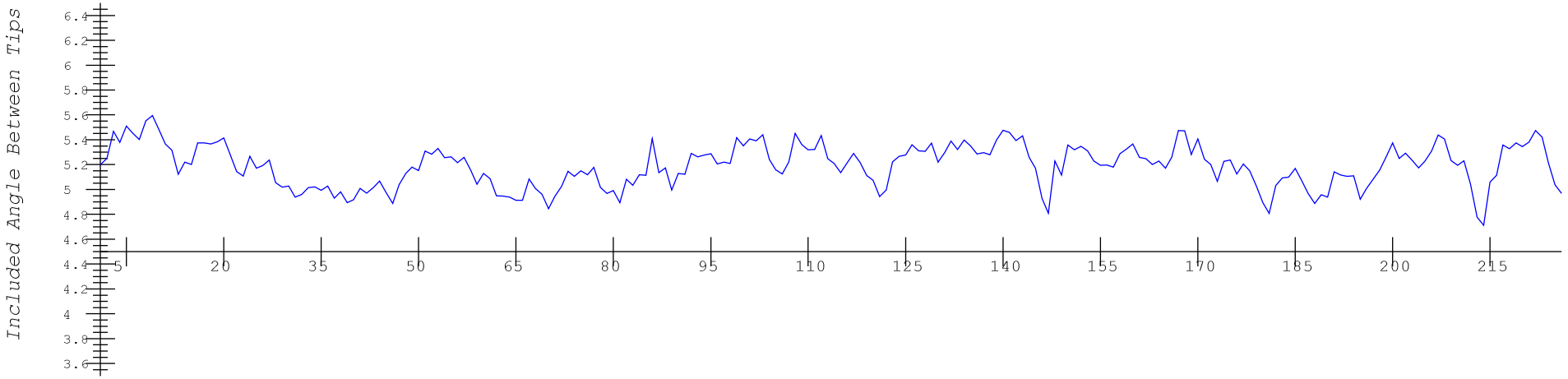
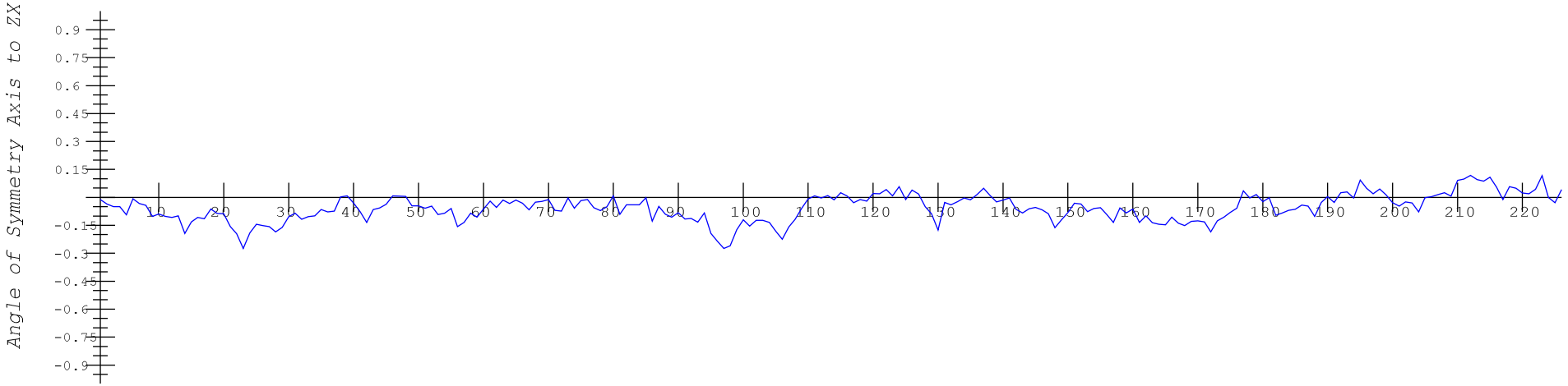


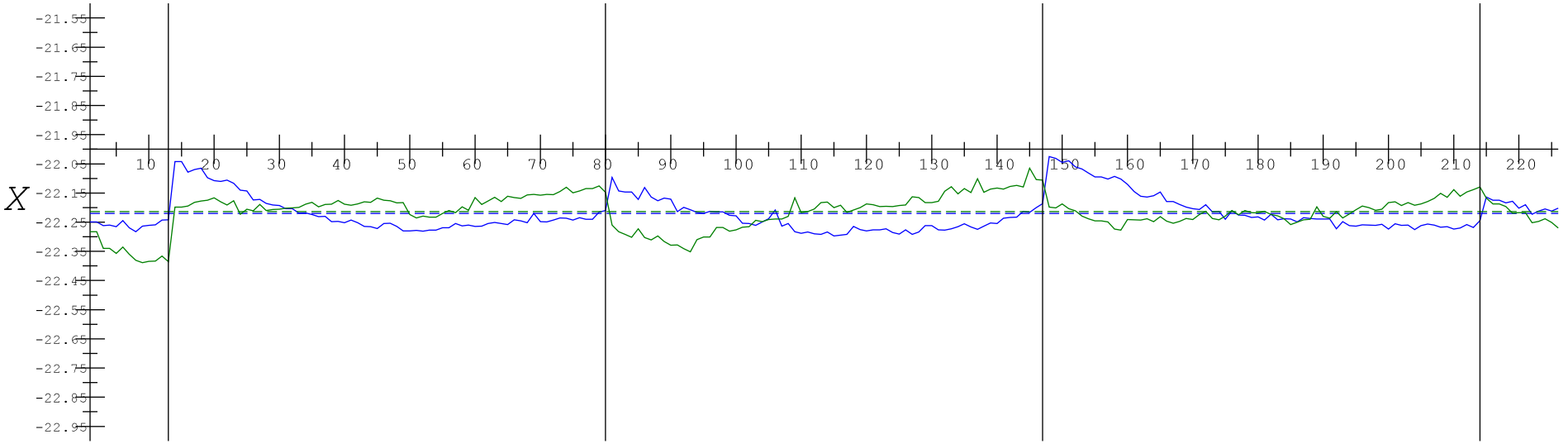
Pole Tip Number ---------->



Symmetry Axis is the symmetry axis between the Upper and Lower Pole Tips
Included Angle is the angle between the Upper and Lower Pole Tips

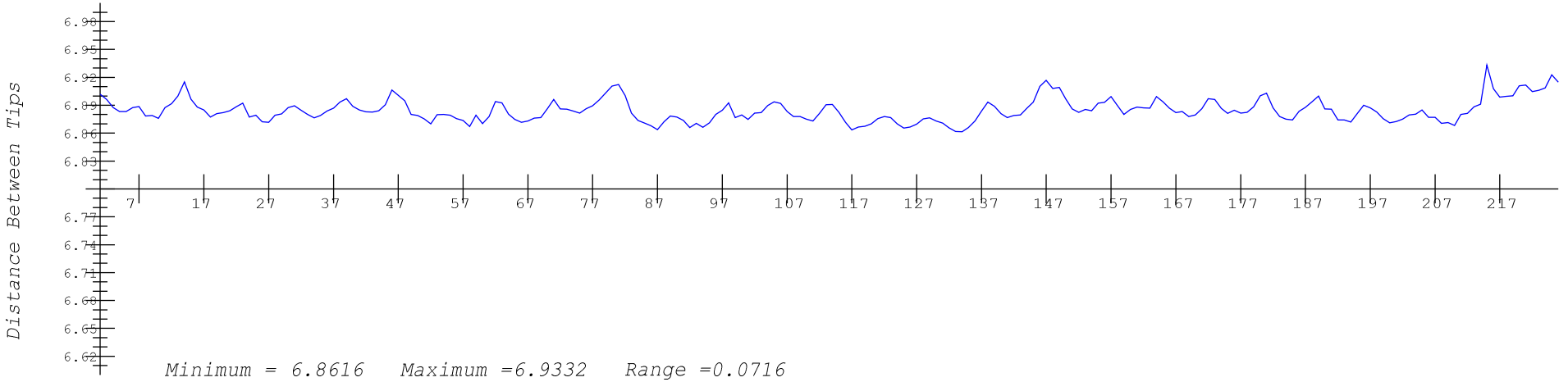
SLAC LCLS-MMF LEITZ CMM	*Undulator Pole Tip Angles* *Post Magnetic Alignment*	*DATE:25-APR-2008* *UNDULATOR #20* *DATASET # 0001* *PROGRAM VERSION 2.7*

Pole Tip Number ---------->



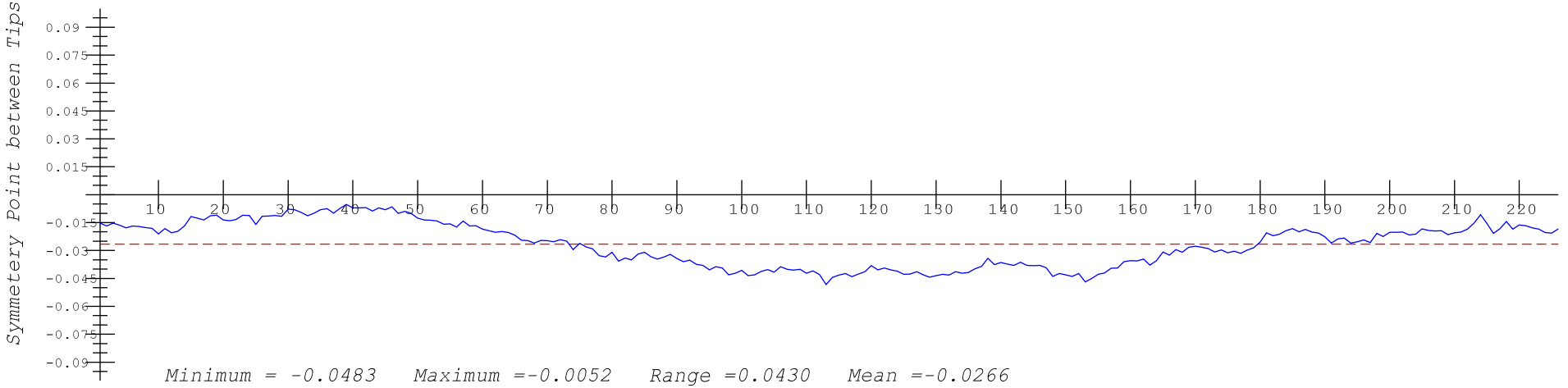
X values in mm
Green Solid = Point on front face of Upper Pole Tip 10mm above Magnetic C/L
Green Dash = Mean value of all Upper Pole Tips 10mm above Magnetic C/L Mean value Upper Pole Tips = -22.214
Blue Solid = Point on front face of Lower Pole Tip 10mm below Magnetic C/L
Blue Dash = Mean value of all Lower Pole Tips 10mm below Magnetic C/L Mean value Lower Pole Tips = -22.220

SLAC LCLS-MMF LEITZ CMM	Undulator Pole Tip Location Post Magnetic Alignment	DATE:25-APR-2008 UNDULATOR #20 DATASET # 0001 PROGRAM VERSION 2.7



Minimum = 6.8616 Maximum =6.9332 Range =0.0716

Pole Tip Number ---------->

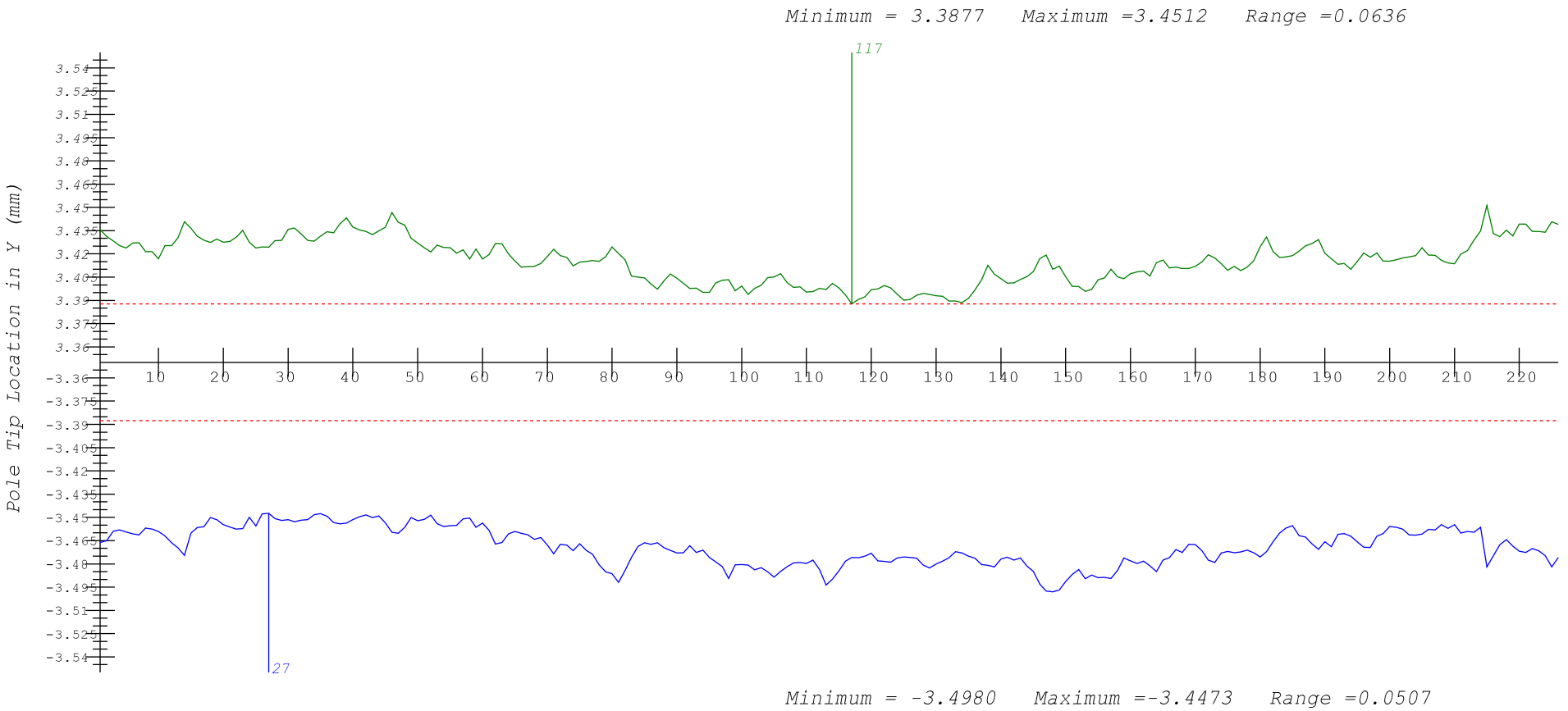


Minimum = -0.0483 Maximum =-0.0052 Range =0.0430 Mean =-0.0266

Symmetry Point is the symmetry point between the Upper and Lower Pole Tips were they intersect a YZ plane at the Magnetic C\L
Broken Red line is Mean Value of Symmetery Points
Distance Between Tips is the distance between the Upper and Lower Pole Tips were they intersect a YZ plane at the Magnetic C\L

SLAC LCLS-MMF LEITZ CMM	*Undulator Pole Tip Location* *Post Magnetic Alignment*	*DATE:25-APR-2008* *UNDULATOR #20* *DATASET # 0001* *PROGRAM VERSION 2.7*

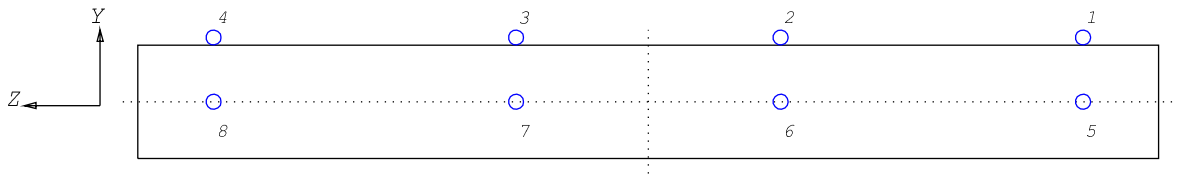
Maximum Chamber Gap = 6.7753



Pole Tip Number ---------->

Green = The position of the Upper Pole Tips at Magnetic C\L
Blue = The position of the Lower Pole Tips at Magnetic C\L
*Max. Chamber Gap = The maximum width vacuum chamber that will fit centered on the Magentic C\L (2*Min. Dev. from C\L)*

SLAC LCLS-MMF LEITZ CMM	*Undulator Pole Tip Location* *Post Magnetic Alignment*	*DATE:25-APR-2008* *UNDULATOR #20* *DATASET # 0001* *PROGRAM VERSION 2.7*

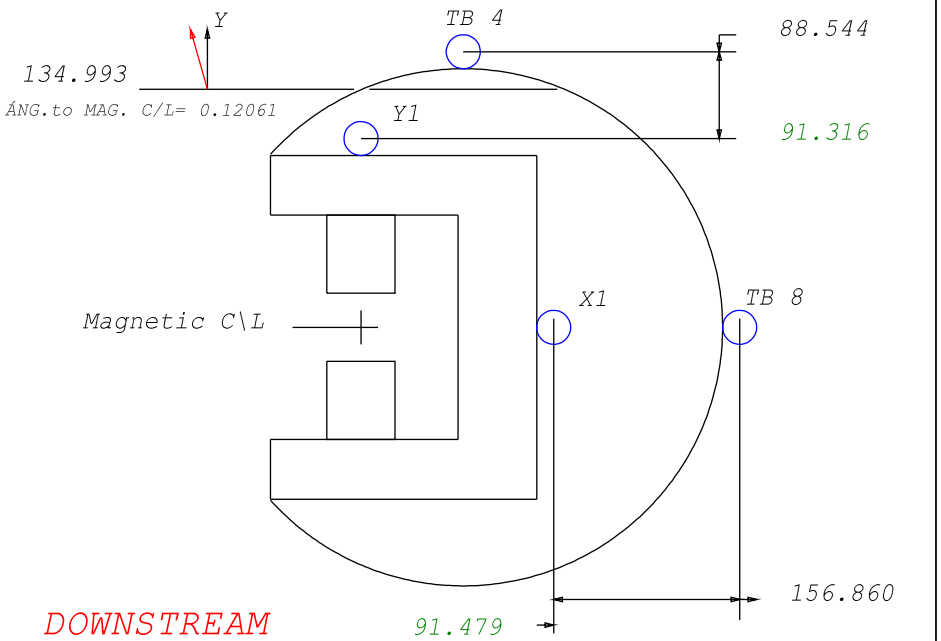


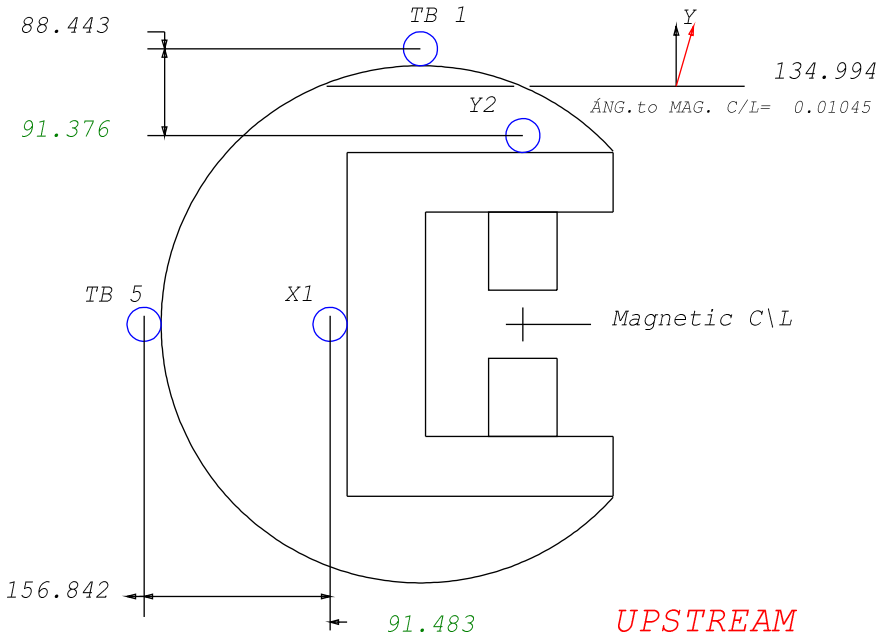
TOOLING BALL LOCATIONS

NUM.	X	Y	Z
1	-0.0669	179.8186	-1558.364
2	0.1027	179.7259	-584.7316
3	0.1103	179.7444	591.2179
4	0.2098	179.8598	1562.1347
5	248.3248	0.0957	-1558.284
6	248.3558	0.0120	-584.7454
7	248.3307	0.0792	591.4020
8	248.3395	0.0490	1562.2254

	C\L Offset	Length
Top Magnetic Structure	-0.061	3380.916
Bottom Magnetic Structure	0.061	3381.140
Strongback	0.327	3400.020

Dimensions in mm Angles in mrad





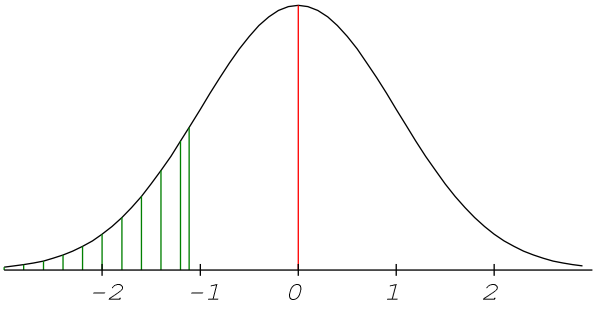
SLAC
LCLS-MMF
LEITZ CMM

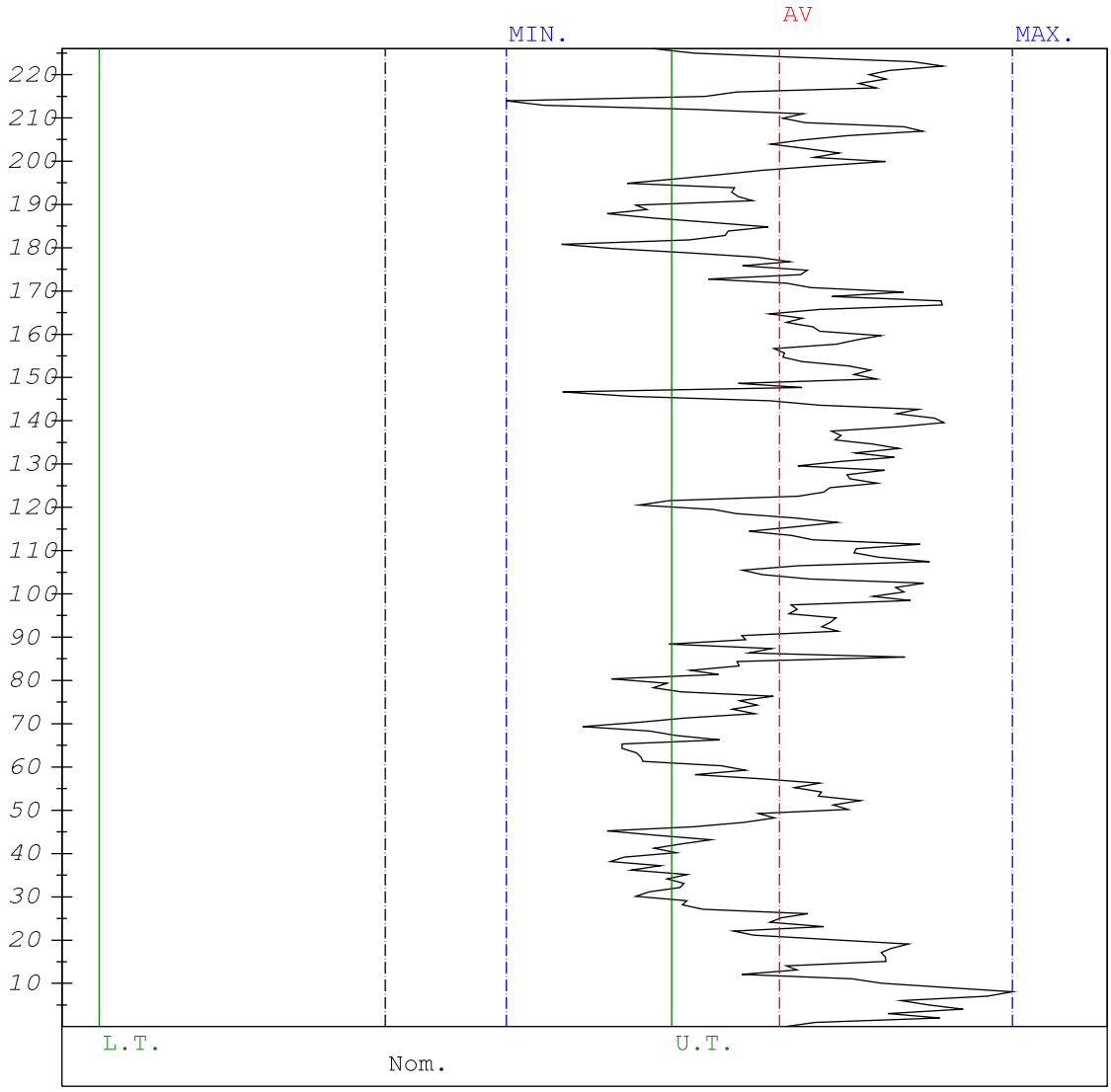
Undulator Dimensional Fiducialization
Post Magnetic Alignment

DATE:25-APR-2008

UNDULATOR #20
DATASET # 0001

PROGRAM VERSION 2.7





Nominal : 4.5000	Averag :5.1885	Cent.-Dev. :0.6885
Up. Tol. :0.5	Maximum : 5.5956	U.Tol.Ex. > : 86.8 %
Low.Tol. :-0.5	Minimum : 4.7114	L.Tol.Ex. < : 0.0 %
Spl.Size : 226	Stand.-Dev.: 0.1691	In Tolerance: 13.2 %
Outlier : 0	Distribution : NOR	Dimension : mrad

SLAC
LCLS-MMF
LEITZ CMM

Statistical Evaluation
Pole Tip Gap Angle
Post Magnetic Alignment

DATE:25-APR-2008

UNDULATOR #20
DATASET # 0001

PROGRAM VERSION 2.7