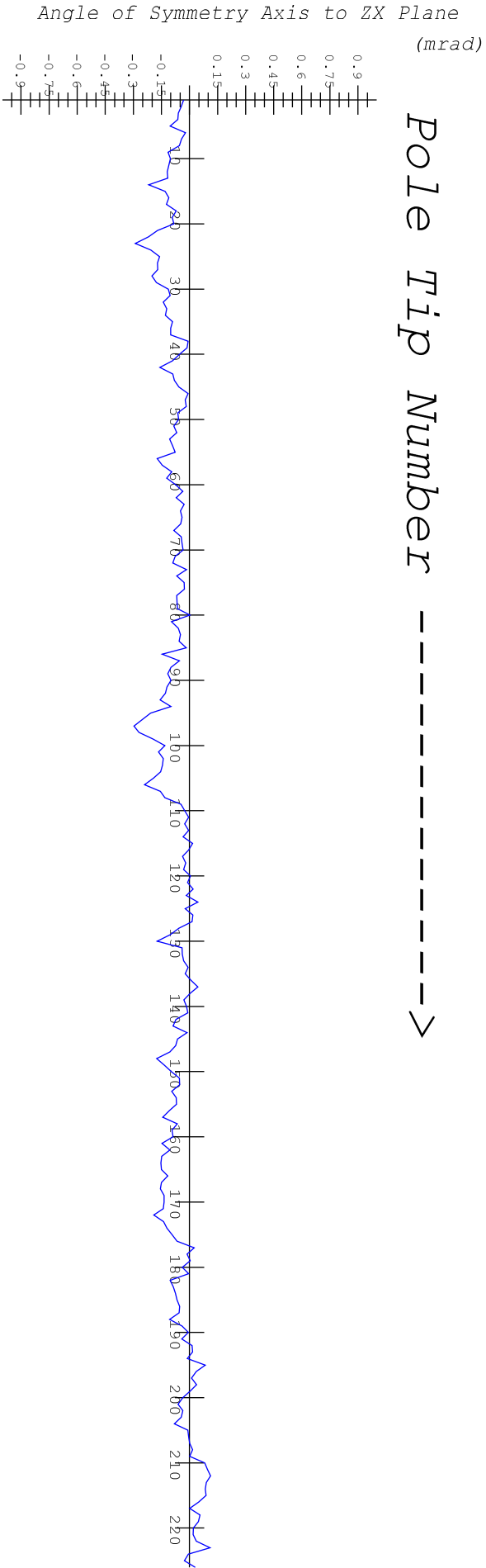
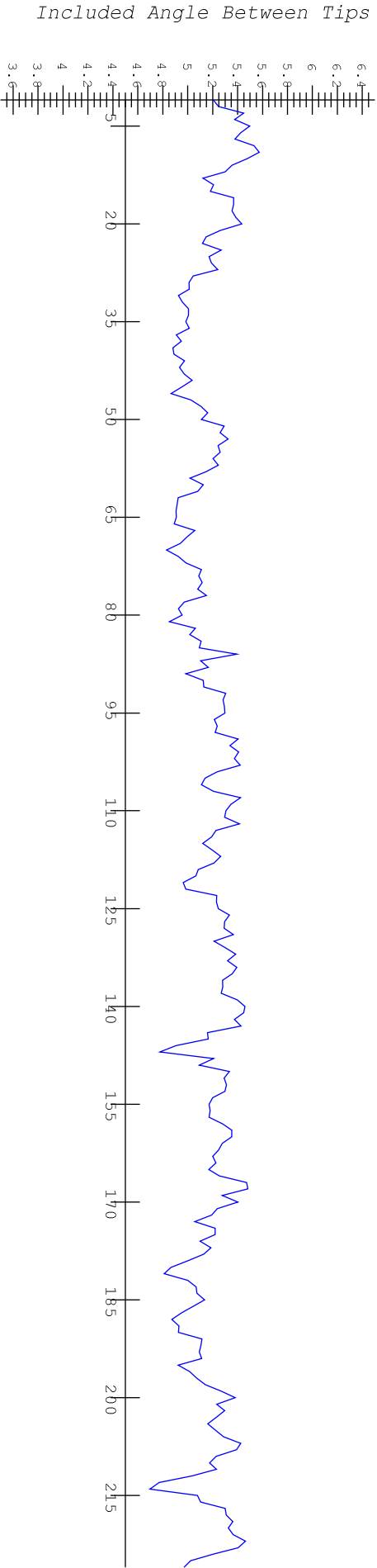




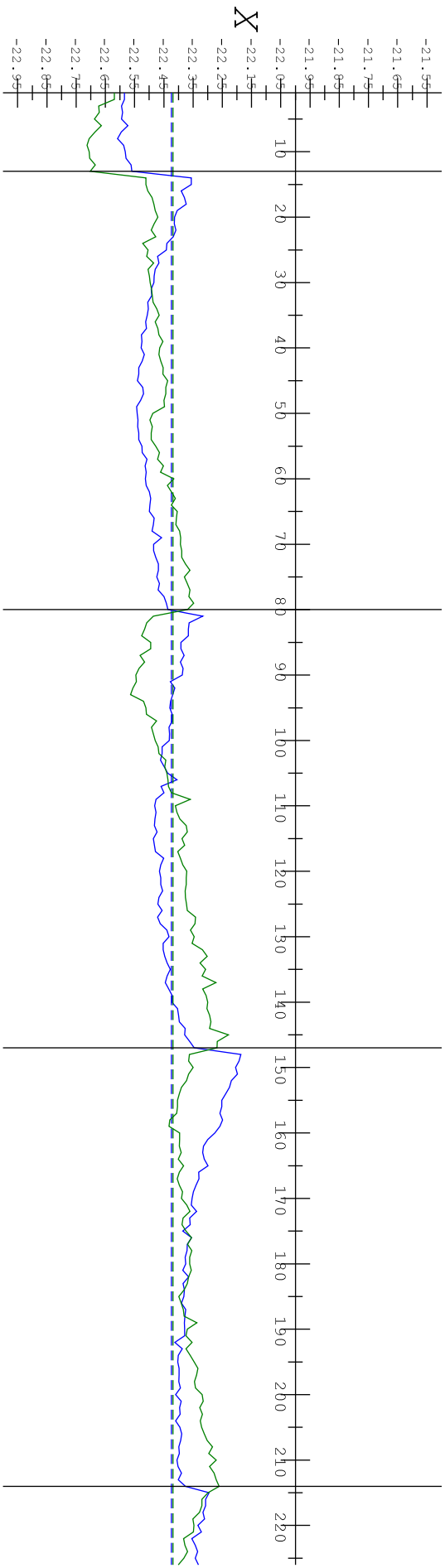
Symmetry Axis is the symmetry axis between the Upper and Lower Pole Tips
Included Angle is the angle between the Upper and Lower Pole Tips

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LEITZ CMM

Undulator Pole Tip Angles
Post Magnetic Alignment

DATE: 07-SEP-2007
UNDULATOR # 20
DATASET # 0001
PROGRAM VERSION 2.1

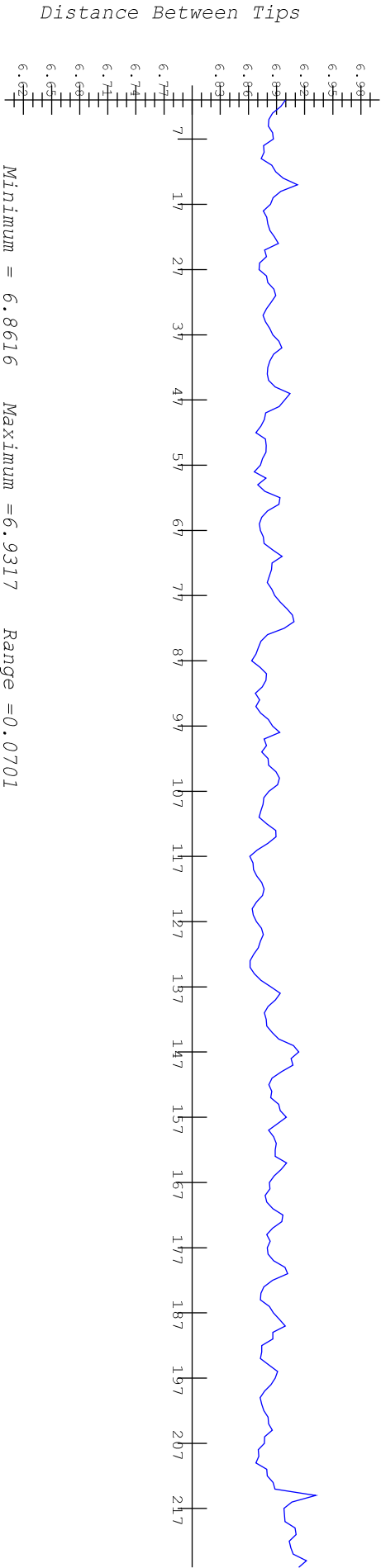
Pole Tip Number ----->



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LEITZ CMM

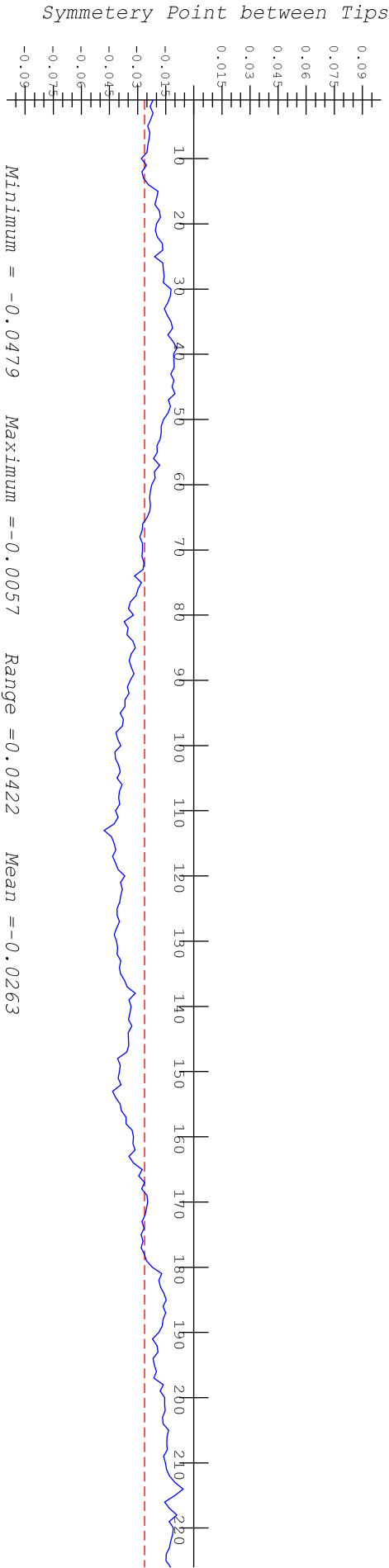
Undulator Pole Tip Location
Post Magnetic Alignment

DATE: 07-SEP-2007
UNDULATOR # 20
DATASET # 0001
PROGRAM VERSION 2.1



in mm

Pole Tip Number ----->

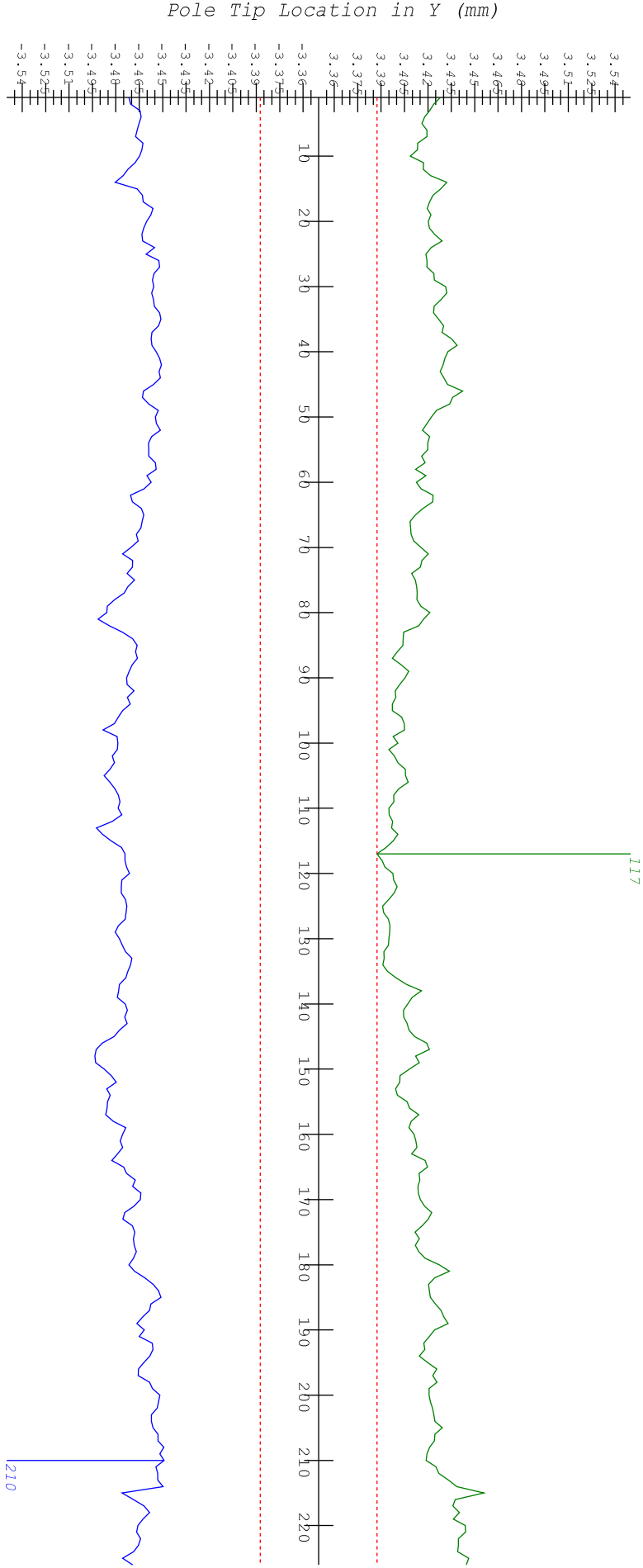


Symmetry Point is the symmetry point between the Upper and Lower Pole Tips were they intersect a YZ plane at the Magnetic C/L
Broken Red line is Mean Value of Symmetry Points
Distance Between Tips is the distance between the Upper and Lower Pole Tips were they intersect a YZ plane at the Magnetic C/L

SLAC LCLS-MMF LEITZ CMM	Undulator Pole Tip Location Post Magnetic Alignment	DATE: 07-SEP-2007 UNDULATOR # 20 DATASET # 0001 PROGRAM VERSION 2.1
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Maximum Chamber Gap = 6.7748

Minimum = 3.3874 Maximum = 3.4557 Range = 0.0683

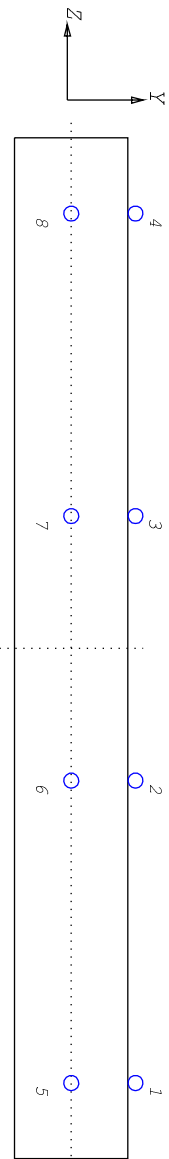


Minimum = -3.4935 Maximum = -3.4491 Range = 0.0444

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 Magnetic C\L (2*Min. Dev. from C\L)

SLAC LCLS-MMF LEITZ CMM	Undulator Pole Tip Location Post Magnetic Alignment	DATE: 07-SEP-2007 UNDULATOR # 20 DATASET # 0001 PROGRAM VERSION 2.1
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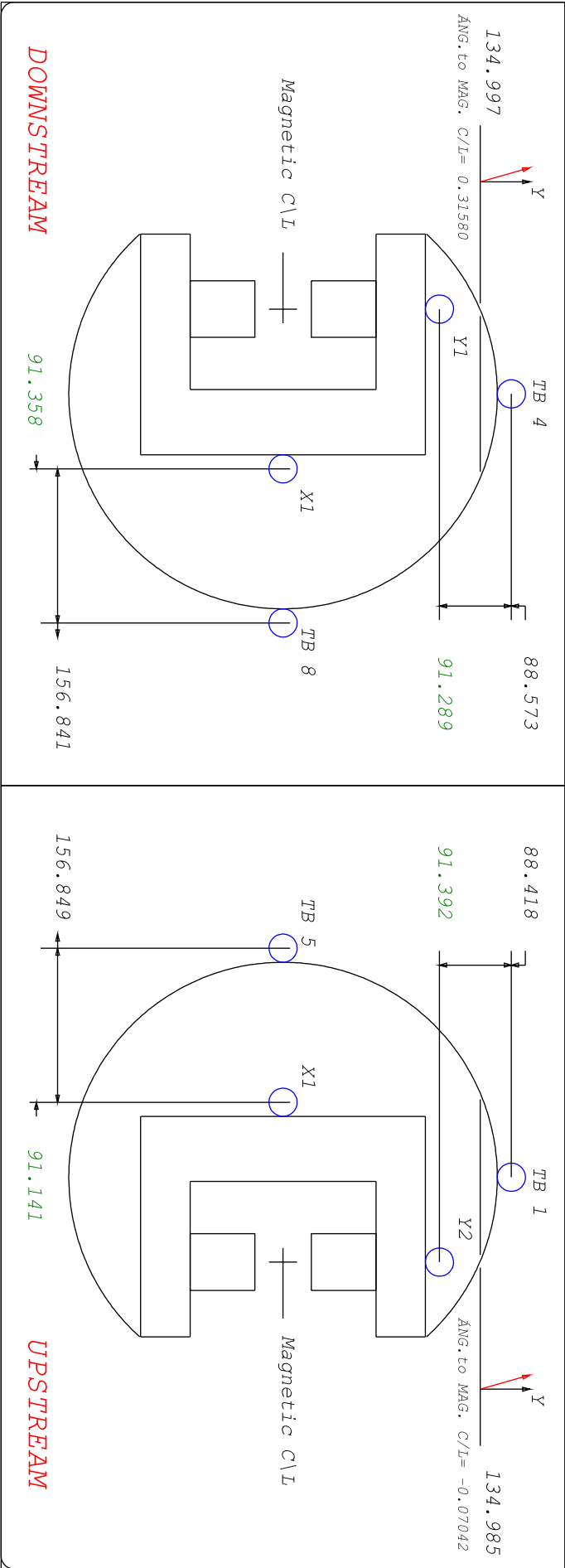


TOOLING BALL LOCATIONS			
NUM.	X	Y	Z
1	-0.3878	179.8098	-1558.350
2	-0.1272	179.7207	-584.7285
3	-0.0450	179.7438	591.2082
4	0.0800	179.8623	1562.1138
5	247.9896	0.0729	-1558.298
6	248.1136	0.0080	-584.7605
7	248.1629	0.0808	591.3899
8	248.1995	0.0515	1562.2030

Top Magnetic Structure	C/L Offset	Length
Bottom Magnetic Structure	-0.061	3380.876
Strongback	0.061	3381.100
	0.334	3399.956

Dimensions in mm

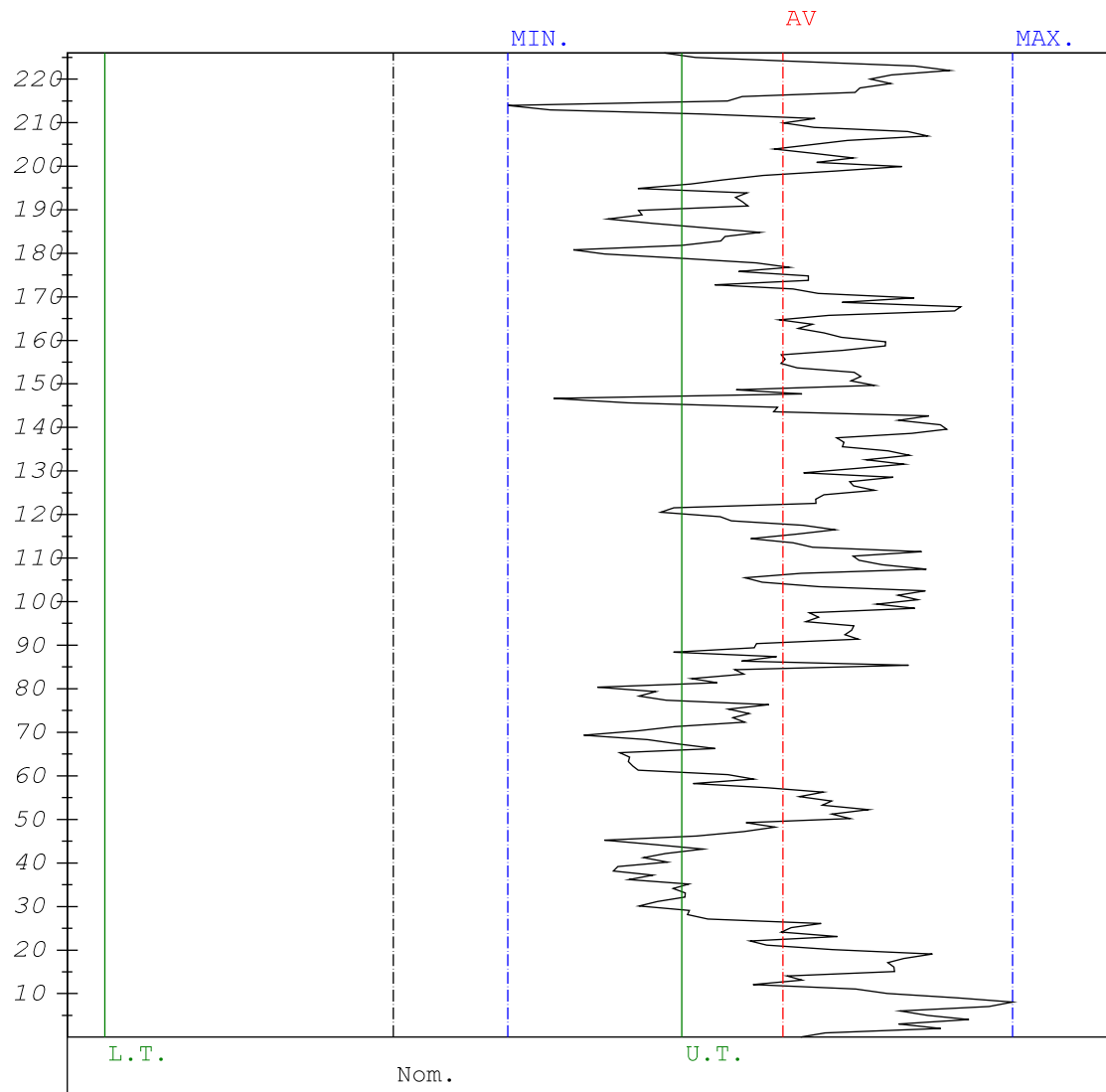
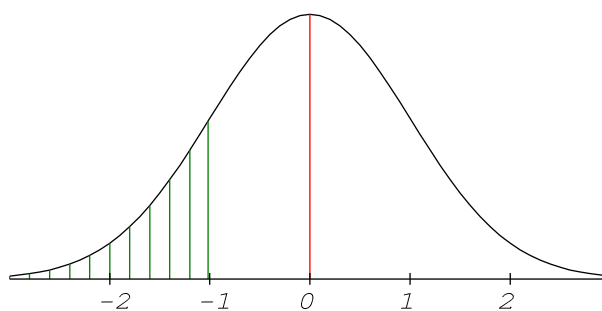
Angles in mrad



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Undulator Dimensional Fiducialization
Post Magnetic Alignment

DATE: 07-SEP-2007
UNDULATOR # 20
DATASET # 0001
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Nominal : 4.5000	Averag : 5.1752	Cent.-Dev. : 0.6752
Up. Tol. : 0.5	Maximum : 5.5732	U.Tol.Ex. > : 84.5 %
Low.Tol. : -0.5	Minimum : 4.6981	L.Tol.Ex. < : 0.0 %
Spl.Size : 226	Stand.-Dev.: 0.1724	In Tolerance: 15.5 %
Outlier : 0	Distribution : NOR	Dimension : mrad

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LCLS-MMF
LEITZ CMM

Statistical Evaluation
Pole Tip Gap Angle
Post Magnetic Alignment

DATE: 07-SEP-2007
UNDULATOR # 20
DATASET # 0001
PROGRAM VERSION 2.1