New LCLS Undulator Parameters

															Actual						For Wiggler Averaged Simulations			
γ	λ_u [cm]	g [mm]	λ_r [Å]	Bu [T]	K	au	E [GeV]	N_u/seg	$L_{center-seg}$ [m]	$L_{end-seg}$ [m]	L_{seg} [m]	$N_{\lambda,short}$	$N_{\lambda,long}$	b [mm]	S-F-S [m]	L-F-L [m]	SuperPeriod [m]	Nseg	LLattice [m]	LDev [m]	ULength [m]	S-F-S [m]	L-F-L [m]	SuperPeriod [m]
7096	3.0	8.2	15.0	1.014	2.84	2.0088	3.63	112.5	3.3750	0.0175	3.4100	3	4	3.0	0.406	0.557	23.1980	33	127.5890	127.0320	3.3750	0.453	0.604	23.2700
22439	3.0	8.2	1.5	1.014	2.84	2.0088	11.47	112.5	3.3750	0.0175	3.4100	3	4	3.0	0.406	0.557	23.1980	33	127.5890	127.0320	3.3750	0.453	0.604	23.2700
27483	3.0	8.2	1.0	1.014	2.84	2.0088	14.04	112.5	3.3750	0.0175	3.4100	3	4	3.0	0.406	0.557	23.1980	33	127.5890	127.0320	3.3750	0.453	0.604	23.2700

γ	dB/dr_F [T/m]	dB/dr_D [T/m]	$<\beta_{x,y}>$ [m/rad]	$<\beta_x>$ [m/rad]	$<\beta_y>$ [m/rad]	max β_x [m/rad]	min β_y [m/rad]	β_x [m/rad]	α_x []	β_y [m/rad]	α_y []
7096	61.13	-60.43	8.9	9.1	8.6	15.7	3.7	14.5247	-1.8129	4.8400	0.7582
22439	61.13	-60.43	24.5	24.6	24.4	28.6	20.5	28.5268	-1.1390	20.5687	0.8265
27483	61.13	-60.43	29.9	29.9	29.9	33.7	26.1	33.6763	-1.0966	26.1340	0.8563

γ	nag_zstart [m]	[m]	[m]	[m]	[m]	[m]
7096	0.0000	3.9035	7.7315	11.6350	15.5385	19.3665
22439	0.0000	3.9035	7.7315	11.6350	15.5385	19.3665
27483	0.0000	3.9035	7.7315	11.6350	15.5385	19.3665

γ	mag_end [m]	[m]	[m]	[m]	[m]	[m]
7096	0.0500	3.9535	7.7815	11.6850	15.5885	19.4165
22439	0.0500	3.9535	7.7815	11.6850	15.5885	19.4165
27483	0.0500	3.9535	7.7815	11.6850	15.5885	19.4165

γ	drift_beg_end [m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]
7096	0	0.3270	3.7020	4.1550	7.5300	7.9830	11.3580	11.6350
22439	0	0.3270	3.7020	4.1550	7.5300	7.9830	11.3580	11.6350
27483	0	0.3270	3.7020	4.1550	7.5300	7.9830	11.3580	11.6350

g	Full Vertical Undulator Gap	Number of Undulator Segments	33
λ_u	Undulator Period	Break System:	3-3-4
γ	Lorentz Factor	SuperPeriod Structure:	F-L-U-S-D-S-U-S-F-S-U-L- D-L-U-S-F-S-U-S-D-S-U-L-
λ_r	Radiation Wavelength		
B_u	Peak On-Axis Magnetic Field	F	QF Length (5 cm)
K	Undulator Parameter	L	Long Drift Length
E	Electron Energy	U	Core Undulator Segment Length
U_{Length}	Segment Core Magnet Length Without Endpieces	S	Short Drift Length
S-F-S	Short Break Length for simulations, identical to S-D-S	D	QD Length (5 cm)
L-F-L	Long Break Length for simulations, identical to L-D-L		
SuperPeriod	Center-to-Center Distance over 6 Consecutive Quadrupoles		
dB/dr_F	QF Gradient		
dB/dr_D	QD Gradient		
$<\beta_{x,y}>$	Average Beta-Function		
β_x	Initial Horizontal Beta-Function (before first QF)		
α_x	Initial Horizontal Alpha-Function (before first QF)		
β_y	Initial Vertical Beta-Function (before first QF)		
α_y	Initial Vertical Alpha-Function (before first QF)		
b	Vacuum Chamber Inner Radius		