

# CEPC Parameters

	<i>Higgs</i>	<i>W</i>	<i>Z</i>
Number of IPs	2		
Energy (GeV)	120	80	45.5
Circumference (km)	100		
SR loss/turn (GeV)	1.68	0.33	0.035
Half crossing angle (mrad)	16.5		
Piwinski angle	2.96	4.74	11.7
$N_p$ /bunch ( $10^{10}$ )	12.9	3.6	1.6
Bunch number	304	5230	11720
Beam current (mA)	18.8	90.5	90.1
SR power /beam (MW)	31.7	30	3.1
Bending radius (km)	10.9		
Momentum compaction ( $10^{-5}$ )	1.14		
$\beta_{IP}$ x/y (m)	0.36/0.002		
Emittance x/y (nm)	1.21/0.0036	0.54/0.0018	0.17/0.0029
Transverse $\sigma_{IP}$ (um)	20.9/0.086	13.9/0.060	7.91/0.076
$\xi_x/\xi_y$ /IP	0.021/0.088	0.008/0.051	0.0034/0.023
RF Phase (degree)	128	134.4	138.6
$V_{RF}$ (GV)	2.14	0.465	0.053
$f_{RF}$ (MHz) (harmonic)	650		
Nature bunch length $\sigma_z$ (mm)	2.72	2.98	3.67
Bunch length $\sigma_z$ (mm)	3.75	4.0	5.6
HOM power/cavity (kw)	0.47 (2cell)	0.31 (2cell)	0.08 (2cell)
Energy spread (%)	0.098	0.066	0.037
Energy acceptance requirement (%)	1.12		
Energy acceptance by RF (%)	2.06	1.48	0.75
Photon number due to beamstrahlung	0.25	0.11	0.08
Lifetime due to beamstrahlung (hour)	1.0		
$F$ (hour glass)	0.93	0.96	0.986
$L_{max}$ /IP ( $10^{34}\text{cm}^{-2}\text{s}^{-1}$ )	2.0	3.9	1.0