

### Cooling Cell Parameters

#### Beam Physics Parameters

Momentum	200 MeV/c
Twiss beta function	107 mm
Dispersion in x	38.5 mm
Dispersion in y	20.3 mm
Beam pipe radius	81.6 mm

#### Design solenoid parameters\*

B0.5	0 T
B0	8.75 T
B1	1.25 T
B2	0 T
Cooling Cell length	800 mm
B0 tolerance	0.25 T
B1 tolerance	0.025 T
B0.5 tolerance	0.02 T
B2 tolerance	0.5 T

#### Simulated coil geometry

Coil inner radius	250 mm
Coil length	140 mm
Coil radial thickness	169.3 mm
Coil z centre position	100.7 mm
Current Density	500 A/mm <sup>2</sup>

#### RF Cavity\*\*

RF cell centre-to-centre distance	188.6 mm
RF Gradient, E0	30 MV/m
Iris radius	81.6 mm
Number of RF cells	3
Frequency, f	0.704 GHz
Synchronous phase	20 degree
RF window thickness	0.1 mm

#### Wedge

Material	Lithium Hydride
Wedge opening angle	10 degree
Wedge thickness	20 mm
Wedge alignment	Horizontal

#### Dipole

Dipole length	100 mm
Polarity	+ - - +
Field	0.2 T
Dipole z centre position	160 mm
Dipole field direction	Vertical

\*Solenoid field on axis defined by  $B = B_{0.5} \sin(\pi z/L) + B_0 \sin(2\pi z/L) + B_1 \sin(4\pi z/L) + B_2 \sin(6\pi z/L)$

\*\* Field on axis in RF cavity defined by  $E = E_0 \sin(2\pi f t + \phi)$ ; adjacent cavities have  $\phi$  offset by 180 degrees