Parameter	Value	Comments
Experiment parameters		
Experiment lifetime	15y	Without performance degradation
Total integrated luminosity		
Bunch structure and timing		
Events/bunch crossing		
Beam spot variation	Longitudinal: Radial:	Radially this includes the variations in beam orbit and the precision with which the tracker can be positioned with respect to the beam orbit
Magnetic field	5T	The tracker must be able to withstand fast dumps of the solenoidal field without the development of excessive forces. Tracker module/detector design should mitigate the combined effect of a large field and pulsed currents that could weaken bond wires.
Other constraints from the machine		Focussing quads? Beam dump protection? Beampipe bakeout?
Tracker geometry		
Inner Radius	Vertex Detector ~1.3 mm (should this be 13mm?) Tracker ~ 10-20 cm	Beam pipe expected to be 1.0-1.1 mm outer radius (should this be 10-11mm?) Normal assumption is separate vertex detector with an outer active layer at ~6 cm and some mechanics outside.
Outer Radius	122 cm	Set by ECAL inner radius at 126 cm
Length	+/- 150 cm	Limited by ECAL
Angular Coverage	Typically to 10 deg (I suspect this is 10deg to the beam)	Includes longitudinal beam spot variation?
Performance		
Momentum Resolution	5×10^{-5}/GeV	Higgs recoil mass from $Z\rightarrow\mu\mu$
Reconstruction momentum limit		What's the lowest momentum for tracks we still want to be able to reconstruct?
Track reconstruction efficiency	Muons: close to 100% Charged pions: Electrons: in jets:	

Charge misidentification		
Pointing Resolution	Few mm?	Particle flow matching
Single-Hit Resolution	TBD	Depends on momentum resolution in 5T magnetic field
Two-Hit Separation	TBD	Need to find good metric
Timing	TBD	
Readout/trigger requirements		
Trigger rates	L0 L1 etc	
Readout rate		
Noise occupancy		
SEU rates		
Reconstruction requirements		
Pattern Recognition	TBD	Need to find good metric, gg→hadron id?
Alignment	It must be possible to align the detector with tracks or an alignment system. It is required that the residual systematic on the momentum scale after alignment should be less than 5% of the intrinsic momentum scale.	
Stability		Split into timescales - "seismic", days, run-to-run, within a run....?
Other requirements		
Material Budget	Target 10-20% X_0 total	Need to cross check with resolution and secondaries production
Power	TBD	Depends on cooling, which depends on material...
Monitoring/Instrumentation	Radiation monitoring	
	Acceleration monitoring	0-250Hz
Integration	The tracker will be integrated and commissioned as one unit outside of the experiment	

Access and Maintenance	Access to beam pipe Access to vertex Access to tracker Detector roll-in/roll-out	
Thermal neutrality	The tracker (incl. services) must be thermally neutral across all of its interfaces to other sub-detectors	
ESD protection		
Grounding and shielding requirements		
HV rating		
Failure rates		
Detector control system		
Interlocks		