

ID	Name	Description	Rationale	Design Validation	Verification Method
FCG-002	Electric Field Uniformity	Field Cage (FC) shall provide an electric field within < 5% of the nominal field throughout fiducial volume	Field non-uniformity should be small enough, such that they can be measured and modeled to less than 1% to match the far detector performance. The electric field will be corrected in the event reconstruction analysis.	Analysis/ Full Scale Demonstrator	MIF Integrated Testing
FCG-003	Electric Field Strength	The field cage shall be able to support an electric field strength >250 V/cm (goal 500 V/cm) without voltage breakdown	Equivalent electric field as FD to enable operation of the near detector with equivalent levels of electron recombination and other field-dependent effects.	Design/ Full Scale Demonstrator	MIF Integrated Testing
FCG-004	Fiducial Volume	FC geometry shall create an active fiducial volume that encompasses all of the pixel plane or > 94.5 m^3	Full pixel plane should be useable without compromise from field distortions. Otherwise, the effective dead region of the detector increases.	Design	Design
FCG-005	Dead volume	Contribution of the field cage to the dead volumes shall be less than TBD	ND-LAr should match the FD specifications accounting for the different geometry/readout systems.	Design	Design
FCG-010	Contamination	LAr impurity contributions from components shall be < 30 ppt	Field structure materials must not emanate impurities that affect LAr electron lifetime	Design/ Full Scale Demonstrator	MIF Integrated Testing

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FCG-012	Structural Support for charge and light readout	The FC shall mechanically support the charge and light readout boards, cabling and feedthrus	The field cage provides the mechanical support as well as cable routing	Design/Analysis	MIF Integrated Testing