| ID | Name | Description | Rationale | Design Validation | Verification Method |
|---|---|---|---|---|---|
| CAL-001 | Electric field measurement precision | Measure the electric field at a given position to better than 1% | In order to reach the physics goals of DUNE, ND must deliver flux measurements for FD and not increase systematic errors associated with the measurements. | ScSims | Full Scale Demonstrator |
| CAL-02 | Calibrated Field Uniformity of 96% (TBR) of active volume | Calibration correction matrix for the Field Uniformity of 96% (TBR) of the active volume shall be accurate to 1%, for all ND LAr TPC modules drift volumes | Modeling of the as-delivered electric field needs to be better than FD. | | |
| CAL-003 | E field stability over time | Run calibration tests between beam spills and monitor E field stability (spatial uniformity and cross-calibration) and update calibration matrix as needed. | Calibration conducted between beam spills does not affect detector livetime, while calibrating detector regularly. | ScSims | Full Scale Demonstrator |
| CAL-005 | Vertex reconstruction precision | Calibration system shall provide measurements to determine corrected vertex (interaction point) precision to better than 0.5 cm | ND pixels are spaced at 0.4 cm driving the limit on the precison of vertex reconstruction. Their spacing in turn is driven by the wire spacing in the FD which is 0.43 cm. | ScSims | Full Scale Demonstrator |
| CAL-006 | Electron Lifetime | Calibration system shall measure the electron lifetime of self generated electron cloud with an uncertainty of TBD | Measurement precision of the electron lifetime should be such to not affect the energy reconstruciton of interactions in the ND modules and this should guide the requirement for the measurement. | Eng Analysis | Full Scale Demonstrator |