Fermilab

U.S. DEPARTMENT OF ENERGY | Office of Science

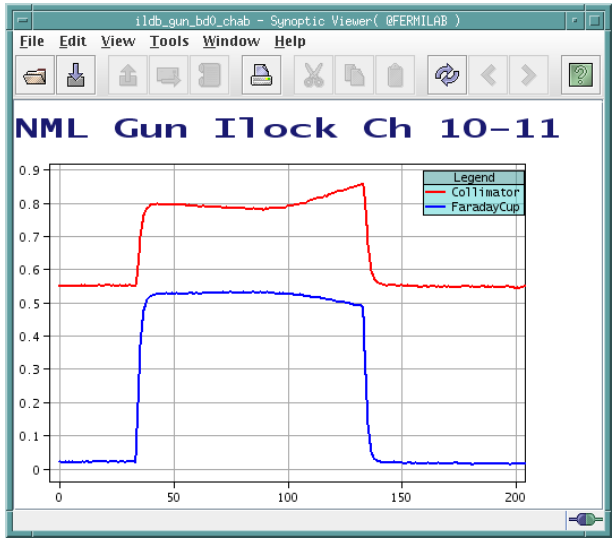
ASTA Latest Update

E. Harms

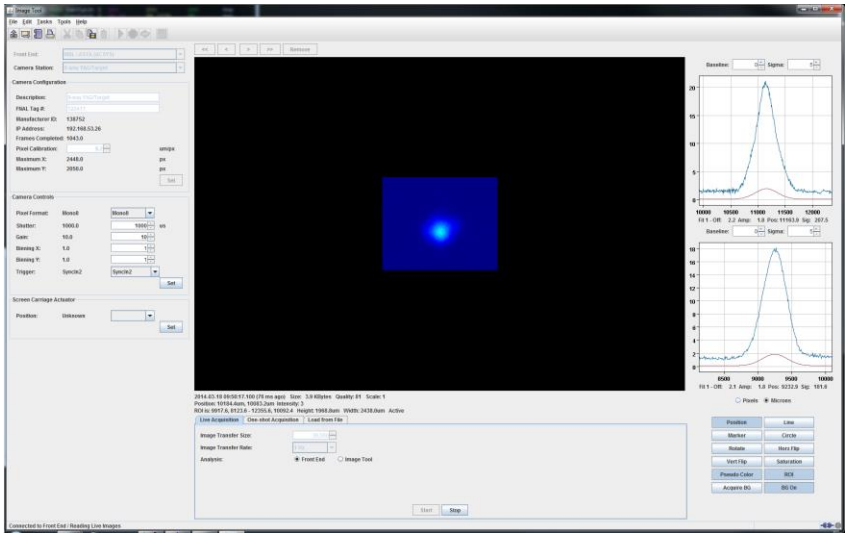
April 2014

Electrons

- Photoelectrons first produced at ASTA on 20 June 2013
  - Molybdenum (uncoated) cathode
- ‘Routine’ Electron operation
- Cs_2Te cathode installed – February 2014
- First electrons with Cs2Te cathode produced on 18 March 2014

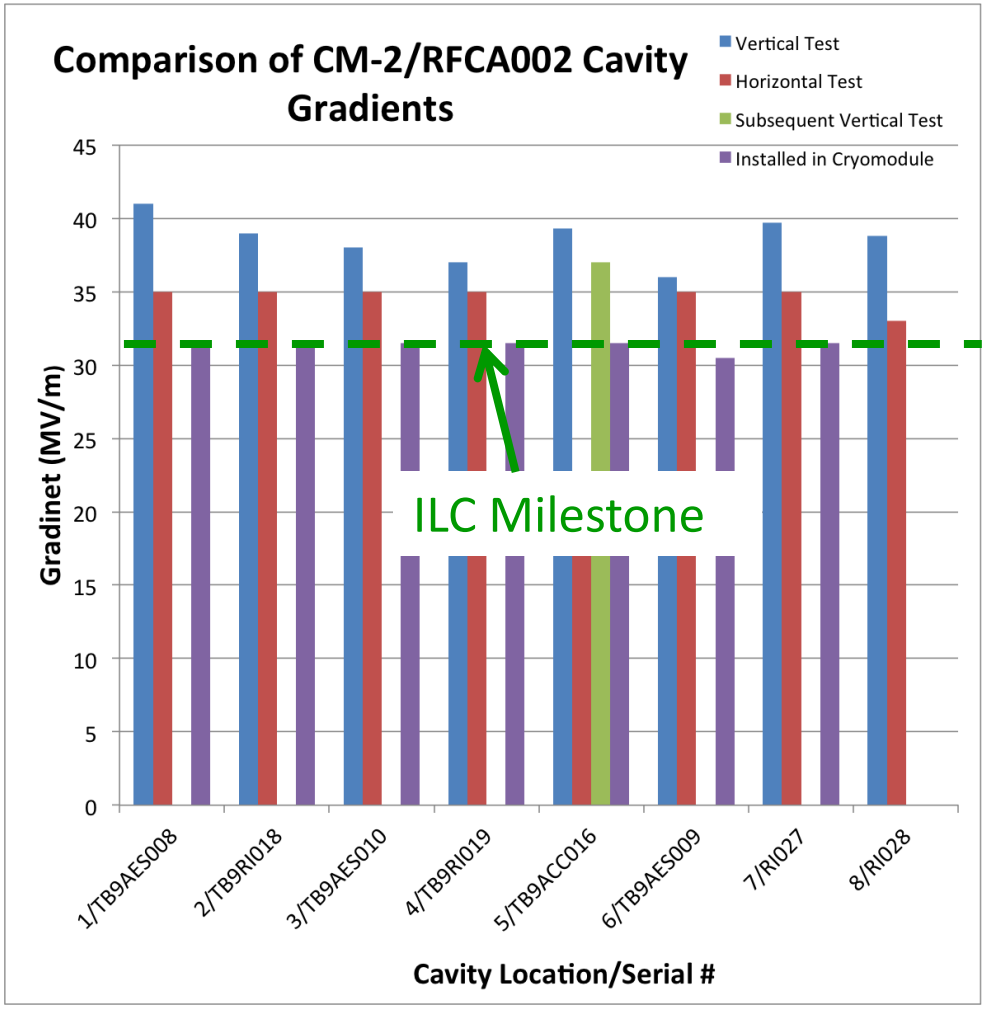


Faraday Cup



YaG Screen

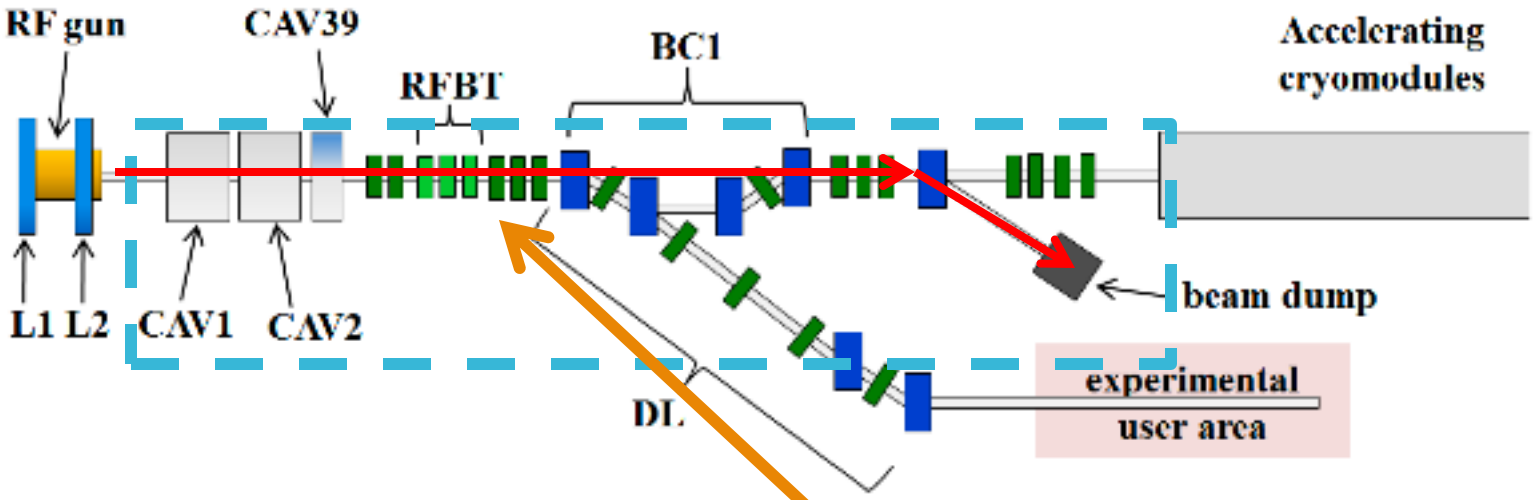
Cryomodules – CM2



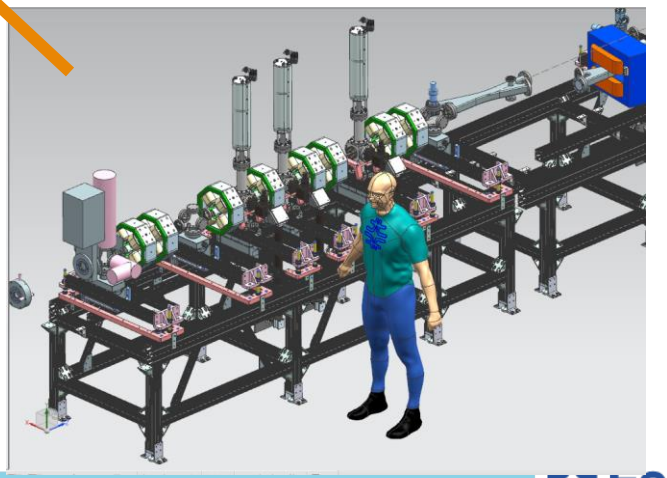
Timeline

- Cryomodule installed in NML/ASTA – April 2013,
- Warm coupler conditioning (one cavity at a time) – 9 May to 18 June 2013
- Cooldown – 23 October to 11 November 2013
- Begin cold operation, Cavity 1 only – 13 November 2013
- Cavity 1 complete (13 November - 30 January, days)
- Cavity 2 complete (31 January - 15 February, 16 days)
- Cavity 3 complete (24 February – 4 March, 9 days)
- Cavity 4 complete (4 – 10 March, 6 days)
- Cavity 5 complete (18 - 26 March, 9 days)
- Cavity 6 complete (28 March - 3 April, 7 days)
- Cavity 7 in progress since 4 April, to be complete week of 13 April
- Cavity 8

50 MeV Beam-line

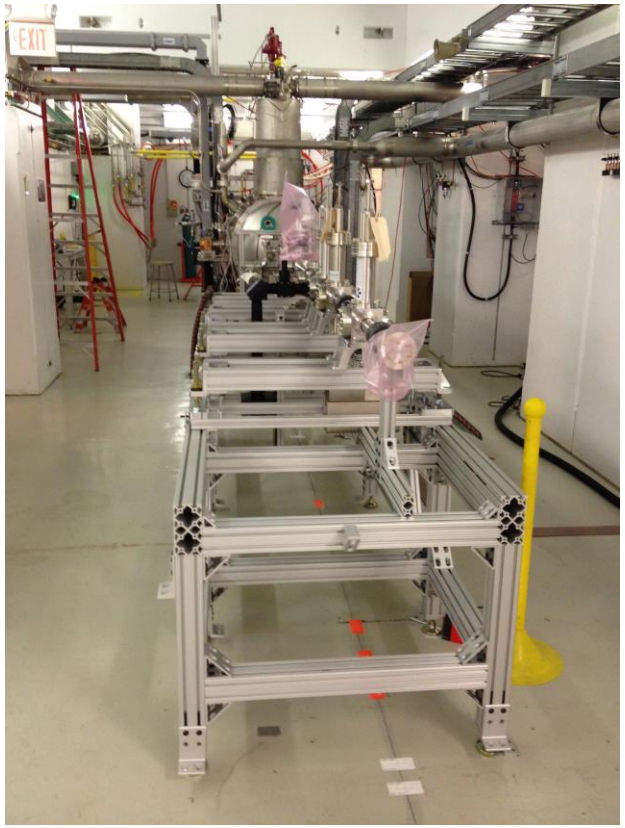


- Current emphasis on installing 50 MeV line (gun to Cryomodule)
- Components installed on girders as much as practical
- Girder alignment, interfaces, vacuum work in situ



50 MeV Beam-line

- Girder #1 and low energy beam dump installed & aligned
- Girder #2 to be installed week of 13 April
- Girder #3 assembly in progress
  - installation in ~1 month



Planned Activities for FY14

- ✓ Complete RF Gun conditioning – 45 MV/m
- ✓ Install ‘coated’ cathode – generate a real beam
- Bring CM2 into operation – *in progress*
- Complete upgrade and install CC1 – *in progress*
- Complete installation & begin commissioning 50 MeV Injector to low energy dump (Stage I.0) – *in progress*
  - initially ~20 MeV operation
- Begin installation of high energy beam line to dump (Stage I.2) including tunnel extension