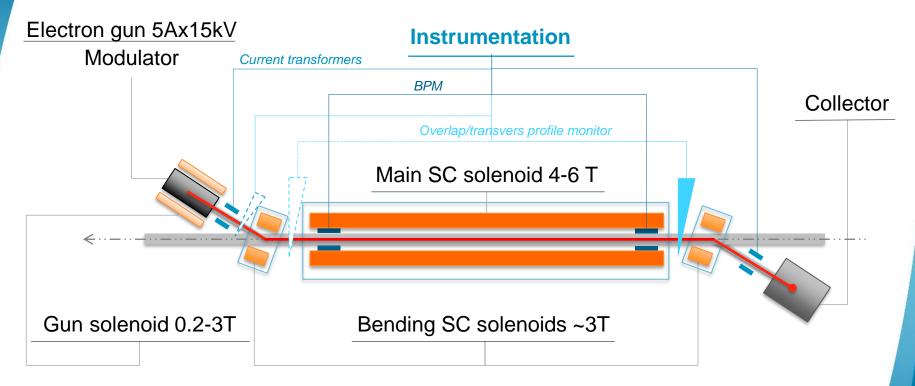


Additional ancillaries for the operation of the Hollow Electron Lens

Adriana Rossi, Giulio Stancari, Michele Martino, Sergey Sadovich



Hollow Electron Lens

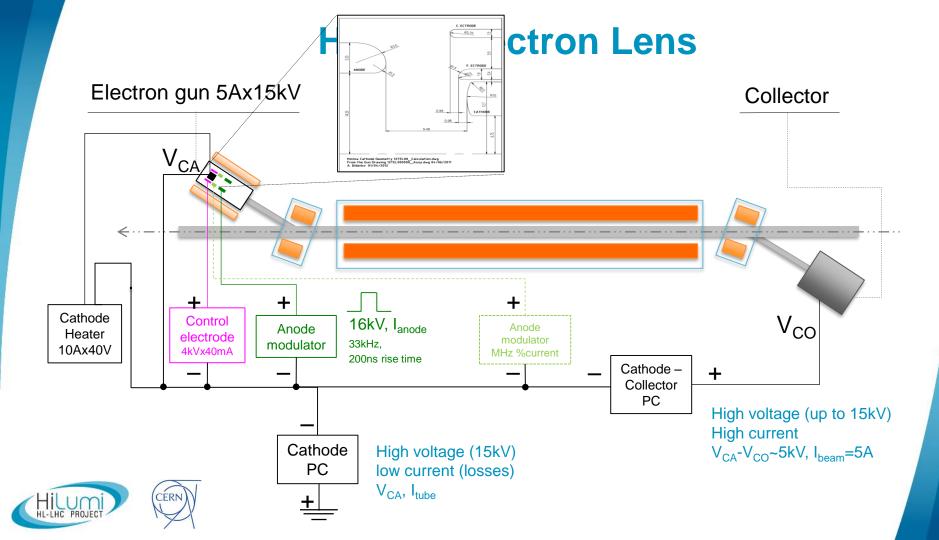






6.4 - 6.5 m

See Diego Perini for design and Maria Gonzalez for integration



Preliminary Budget (uncertainty: $\pm 20\%$)

Magnets powering: [989,1059] kCHF

Operational converters: 780 kCHF

89 kCHF Converter spares:

Manpower (Assembly/Test/Installation) 100 kCHF

Control rack (GWs+Eth.Cabling) 20 kCHF

Coupled control (if needed: 1 fellow x 1 year) 70 kCHF (*)

200 kCHF HV powering:

Operational converters: 100 kCHF

20 kCHF Converter spares:

Manpower (Assembly/Test/Installation) 10 kCHF

Control equipement: (PLC, FEC...) 30 kCHF

HV cables (computed for 70m length) 40 kCHF

"Baseline" project (2 x HELs): ≈ 1.3 MCHF







Key Points

- Preliminary proposal based on "baseline" configuration
- Budget: uncertainty accepted (HV to be redefined)
- Two main powering systems: Magnets and HV
- HV: DC powering only
 - Modulator beyond EPC expertise
- Magnets: "HL-LHC" converters 600A-10V and 60A-10V
 - based on upcoming redundant converters (full redundancy below 400A)
 - if new design needed overcost of 1MCHF per design (strongly not advised)
- Main solenoids: Energy Extraction allowed up to 1kV c.m.
 - 1.2 MJ (at 450A) to be managed (slow discharge, E.E. activation etc.)
 - no need of E.E. for 3 4 Henry-circuits currently foreseen (Scenario 2)
- Coupled control of circuits might require special solution
 - new control (hw&) sw might be needed: overcost already considered



Estimates do not include DC cabling, AC, cooling and ventilation, ...