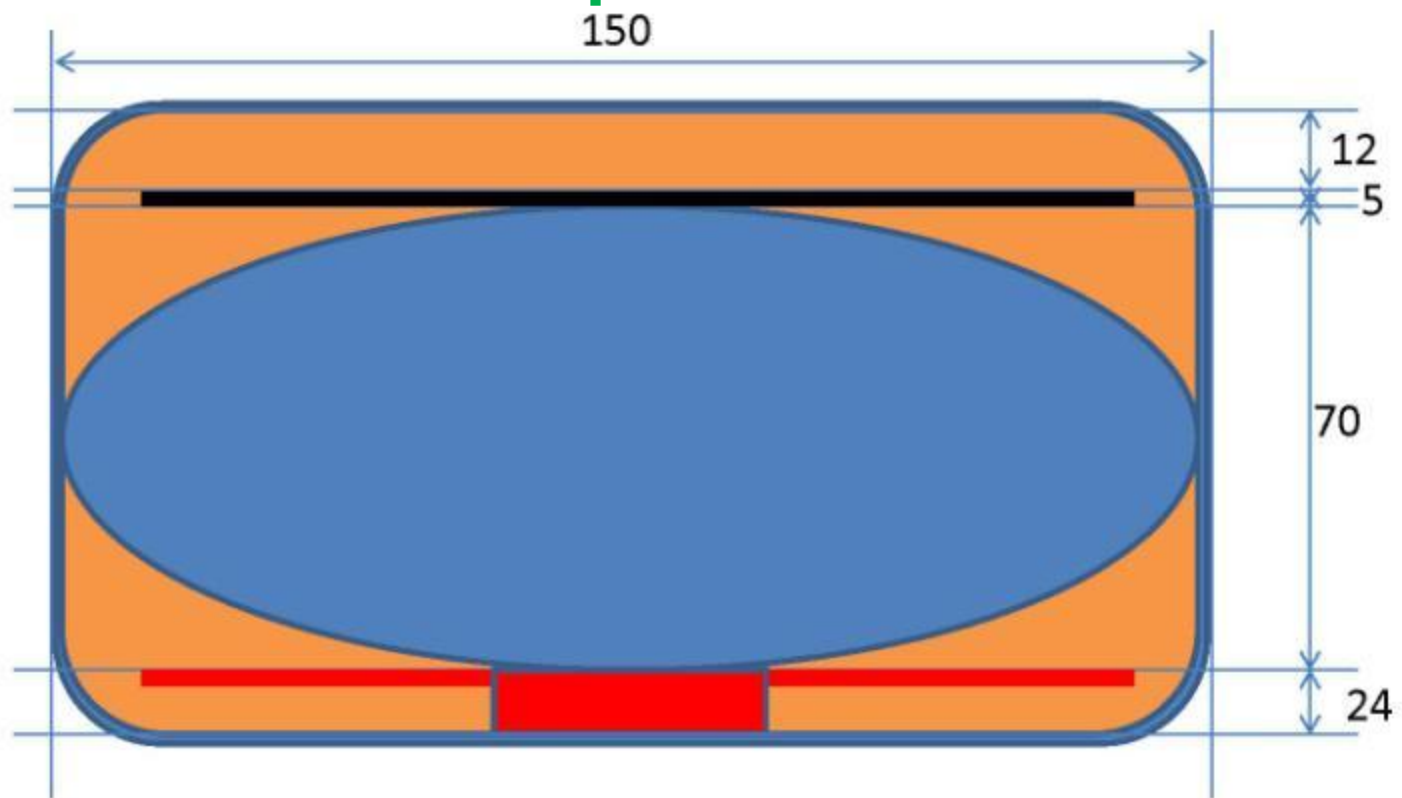


# PS IPM height (magnet aperture)

mariusz.sapinski, 2014.09.22

# Cross-section up to now



Black: negative electrode -20 kV

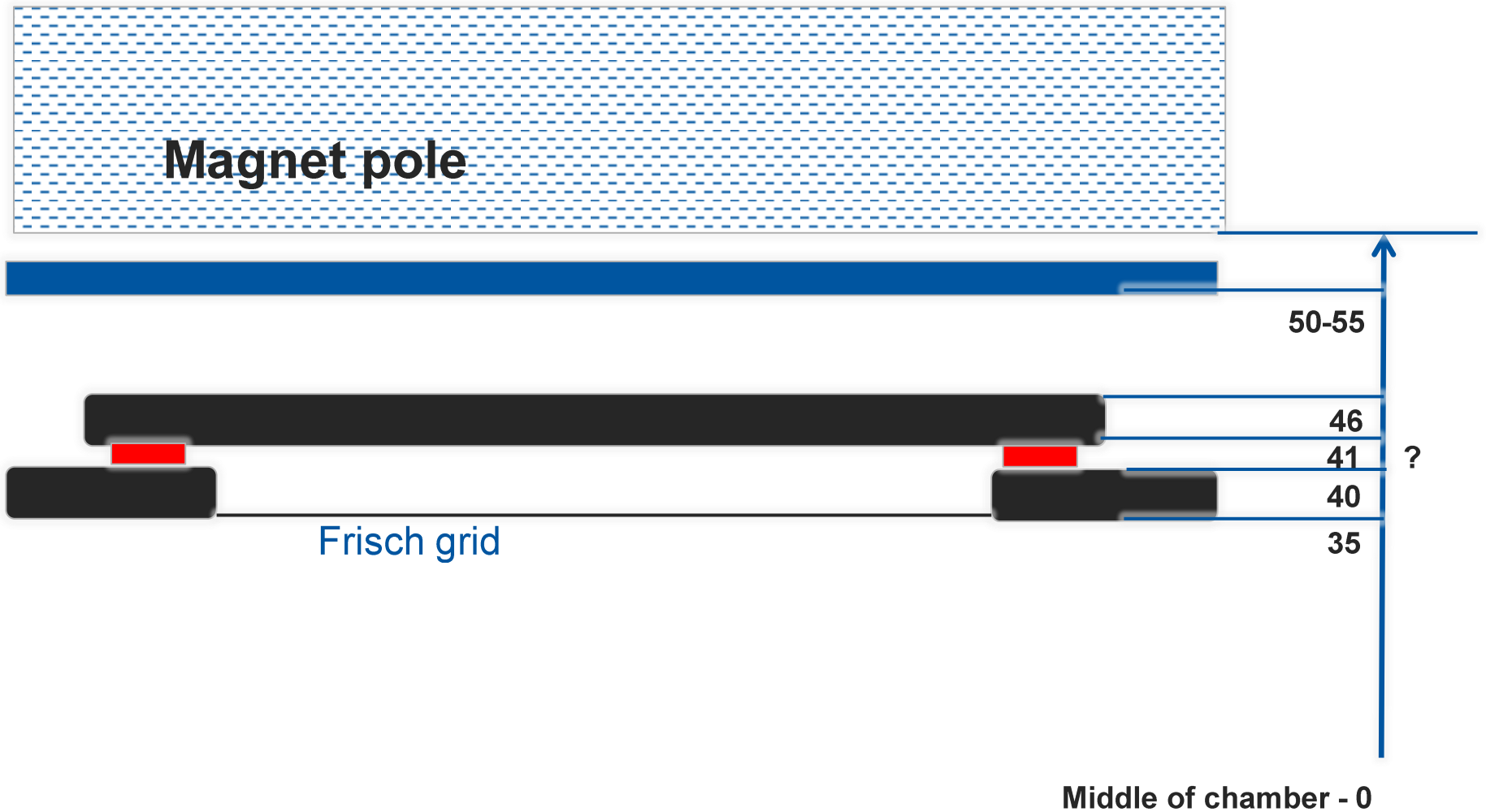
Red: ground electrode with Timepix3

Thickness of vacuum chamber walls: 2 mm

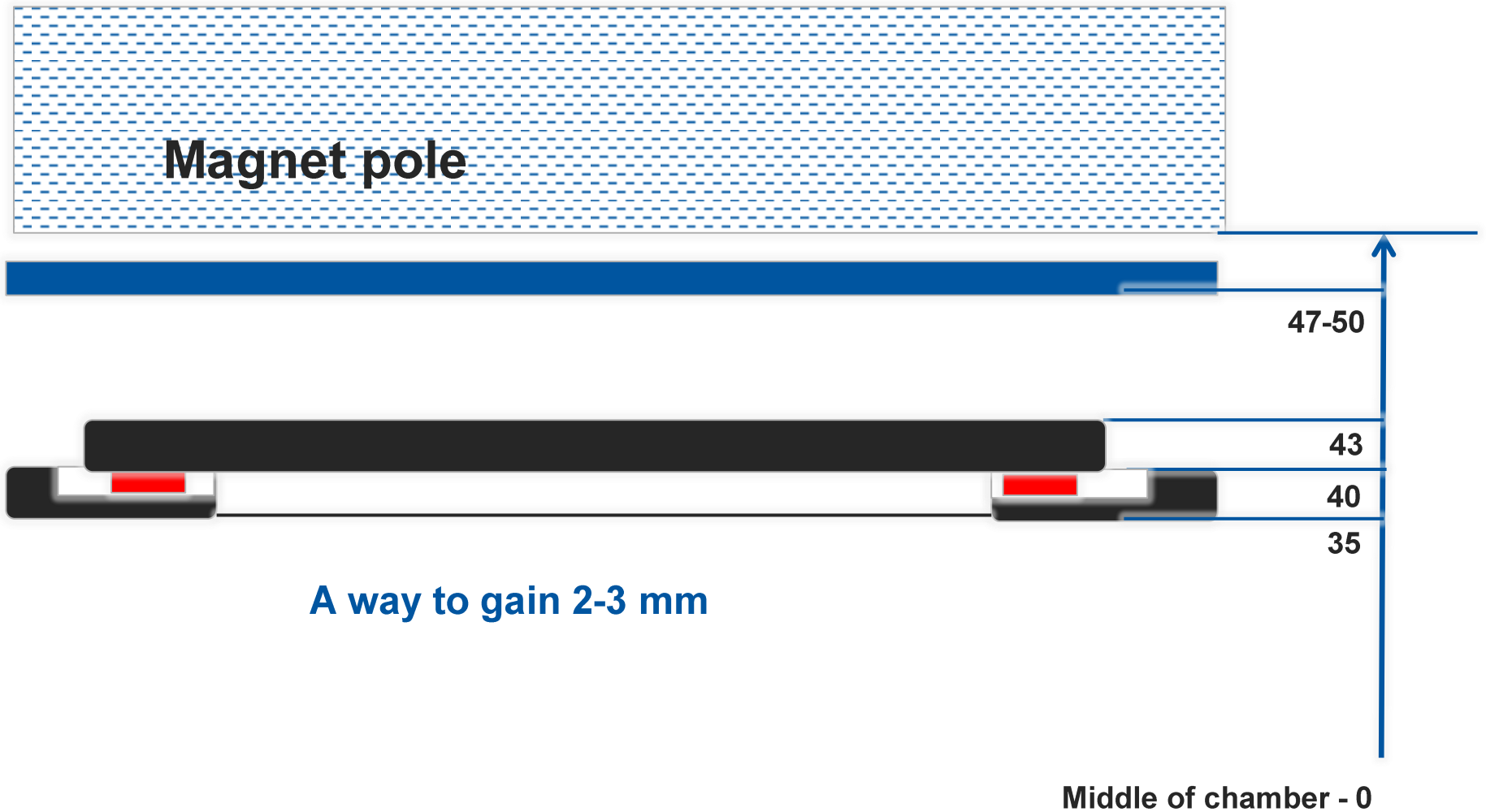
Total height =  $2+12+5+70+24+2=115$  mm

Total width =  $146+2+2=150$  mm

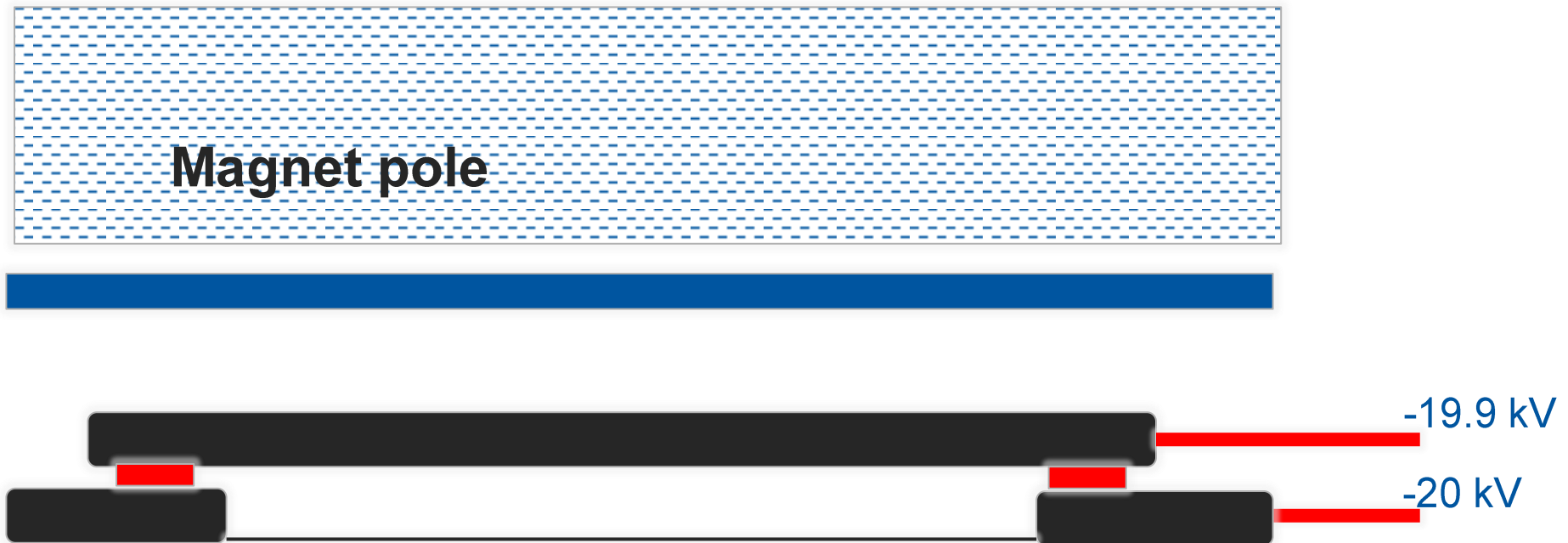
# Upper electrode – ion trap



# Upper electrode – ion trap

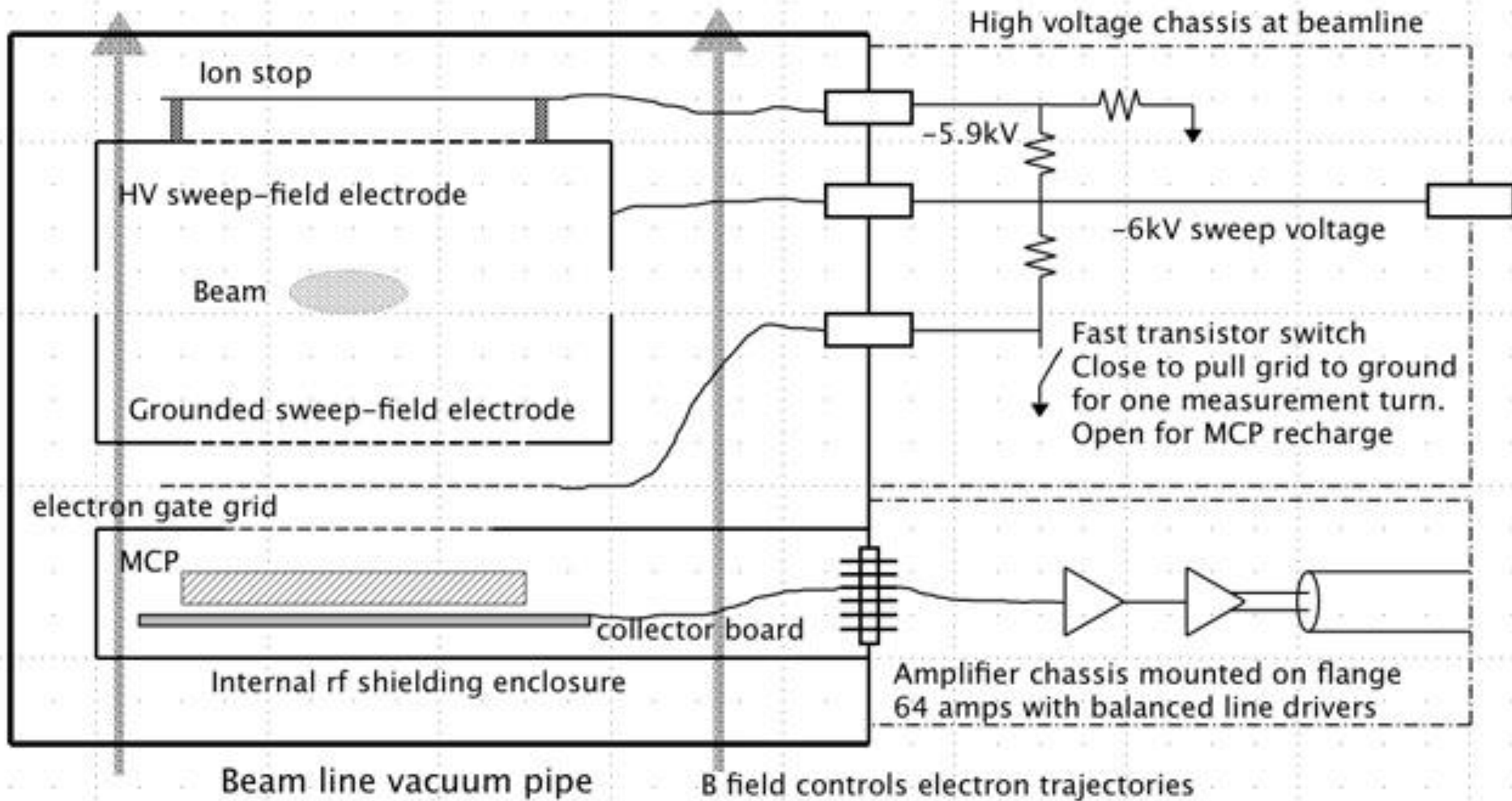


# Upper electrode – ion trap



Closed electric circuit, voltage divider outside vacuum, as in BNL solution. In this case the two electrodes of the ion trap are simply isolated.

# Upper electrode – ion trap



# Bottom electrode – detector

Middle of chamber - 0



Sensor 100  $\mu\text{m}$ , chip 100  $\mu\text{m}$ ,  
PCB 4 mm, total 5 mm

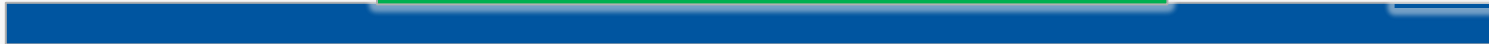


Cold/cooling plate, 15 mm ?

Frisch grid (RF fields protection)



35  
37



57

**Magnet pole**

# Total dimension



Let's assume: 112 mm + mechanical tolerances

+ other mechanical constraints? Rails? Thermal insulation for cold plate?

+ cooling: could it be +/- okey?

+ cables? Do we need more space? Situation close to bottom electrode - complex