[2-4-8] Ion Chamber for Fragment (ICF)

* Design

ICF is a multi layer ion chamber, and placed after the SAMURAI magnet. It is used to measure the charge of projectile fragments.

Due to several technical difficulties (available size of double-sides Al-Mylar foils, method to make double-sided segmented anodes, etc.), effective area of the present ICF is much smaller than that of FDC2. We should have used the wire cathode as well to have larger effective area.

electrodes	12 anode & 13 cathode planes
anode-cathode gap	20mm
effective area	750mm (H) x 400mm (V) x 480mm (deep)
anode	80 μ m ϕ Au-Al, 5mm pitch, 18 wires are or-ed to make a 90mm-wide strip, 2 strips are or-ed for readout (4ch/plane)
cathode, window	12 μ m-thick Al-Mylar
Gas	P10 @1atm
HV	cathode (-), anode is at ground potential
readout	4ch/plane x 12 planes = 48ch, preamp (Mesytec-MPR16 x3 with 10 μ s decay time), shaping amp (MSCF-16LE x3, active BLR, unipolar output, 0.25 μ s shaping time), and peak sensitive ADC (MADC32 x2)

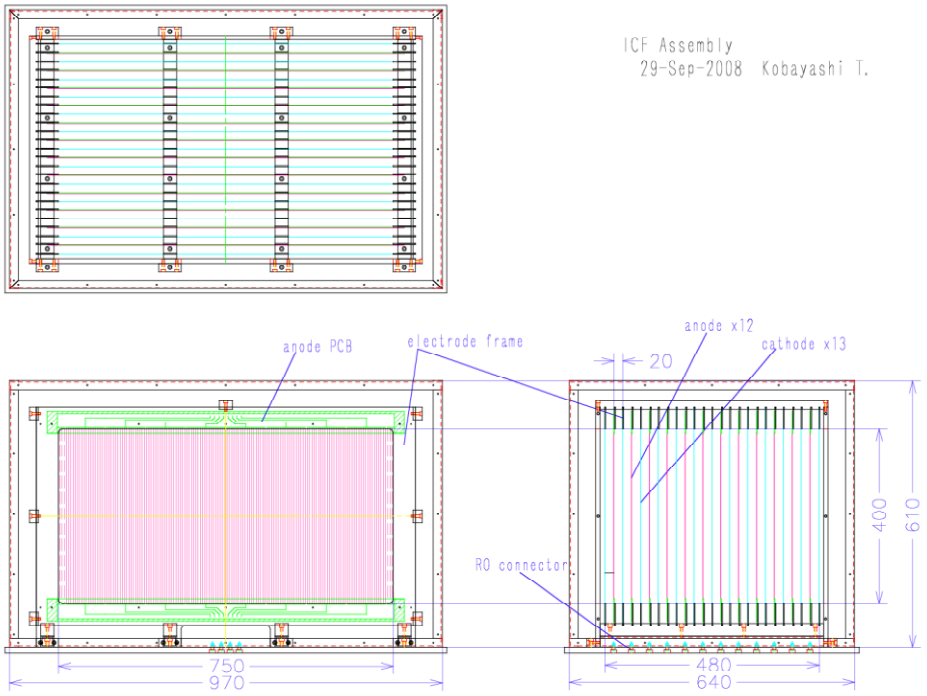

Fig 2-4-8 : ICF assembly