

June 30, 2014

Test Cave

chopper assessment to resolve max power and spacing on beamline: Cavity 1 delivered to Mark Wissmann who is beginning the tests. Bubba and Phil will grab cavity 2 this week, they will grab the ground screen too.

gun chamber ground screen/neg strip welding: looks good, hopefully the screen can be installed relatively easily, and hopefully is stays put when high voltage is applied to cathode. Phil imagines installing something to hold things in place.

electrode we want for the test cave gun: Matt to have the machine shop make 316L stainless steel front and back pieces. Carlos would like Danny to draw a 15 degree front piece and have it manufactured too.

anode spacer for polarized gun, that Danny and Carlos agreed upon: shop is making two

Correct size manipulators for gun and suitcase that help us maintain a walkway: John/Joe to check once the beamline gets laid out. Shorter manipulators will be purchased

HV supply SF6 tank: John will remove glassman stuff from shipping cartons, and put together to get final dimensions for SF6 tank.

New Y-chamber/laser chamber: Kurt Lesker provided a quote, part is ordered.

work spaces functional and looking good, clean out the cave and surrounding areas: everyone, in progress

how to make Jim's old space a useful area?: use benches from ARC L309. Purchase more work space as needed.

There are plenty of good electronics racks at off-site storage facility. We just need to ask Tom Carsten of Hall D for them

Review the beamline layout, identify missing items: Joe waiting for new version of Solid Works, will work on it soon.

GTS

weldment of ground screen and neg sheet support bars: checking installation

replace the warped table top: Bubba to work on this once power restored to FEL building

CsK2Sb chamber Danny drew for us, below: input from group welcome, but should act soon. Sent to shop for manufacture.

CsOH and KOH crucibles we need to buy: Matt will duplicate the order from Russ, per Mamun's instructions. Matt to order the hydroxides.

Fall-back effusion sources that might need to be repaired: Matt to take broken sources to shop, with replacement valves.

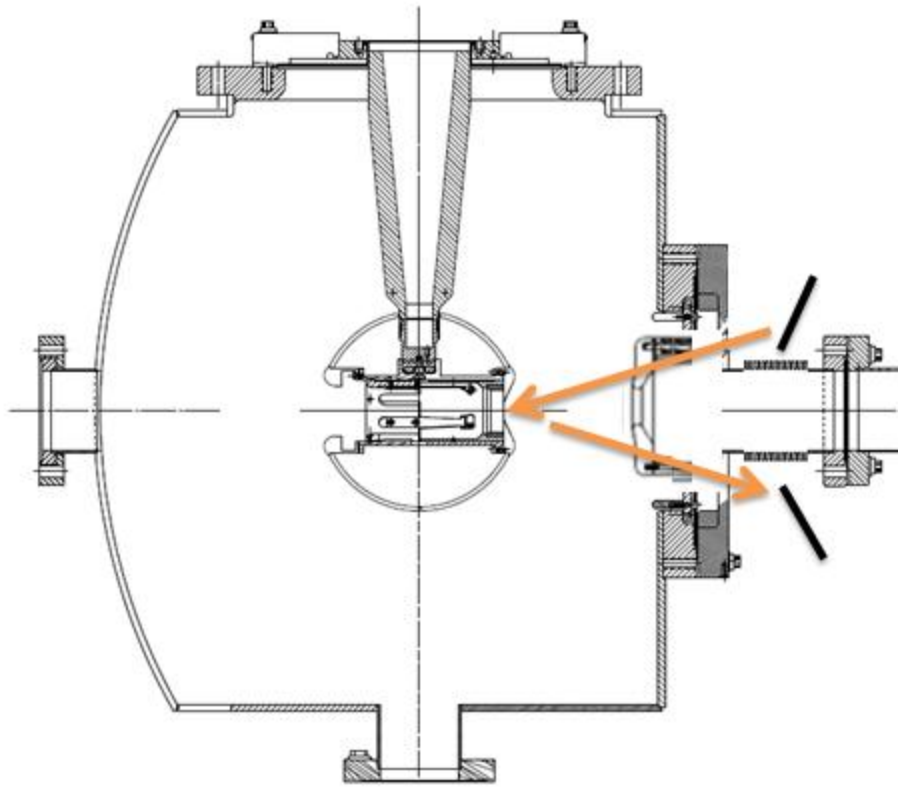
Which cathode electrode to use: whatever is available

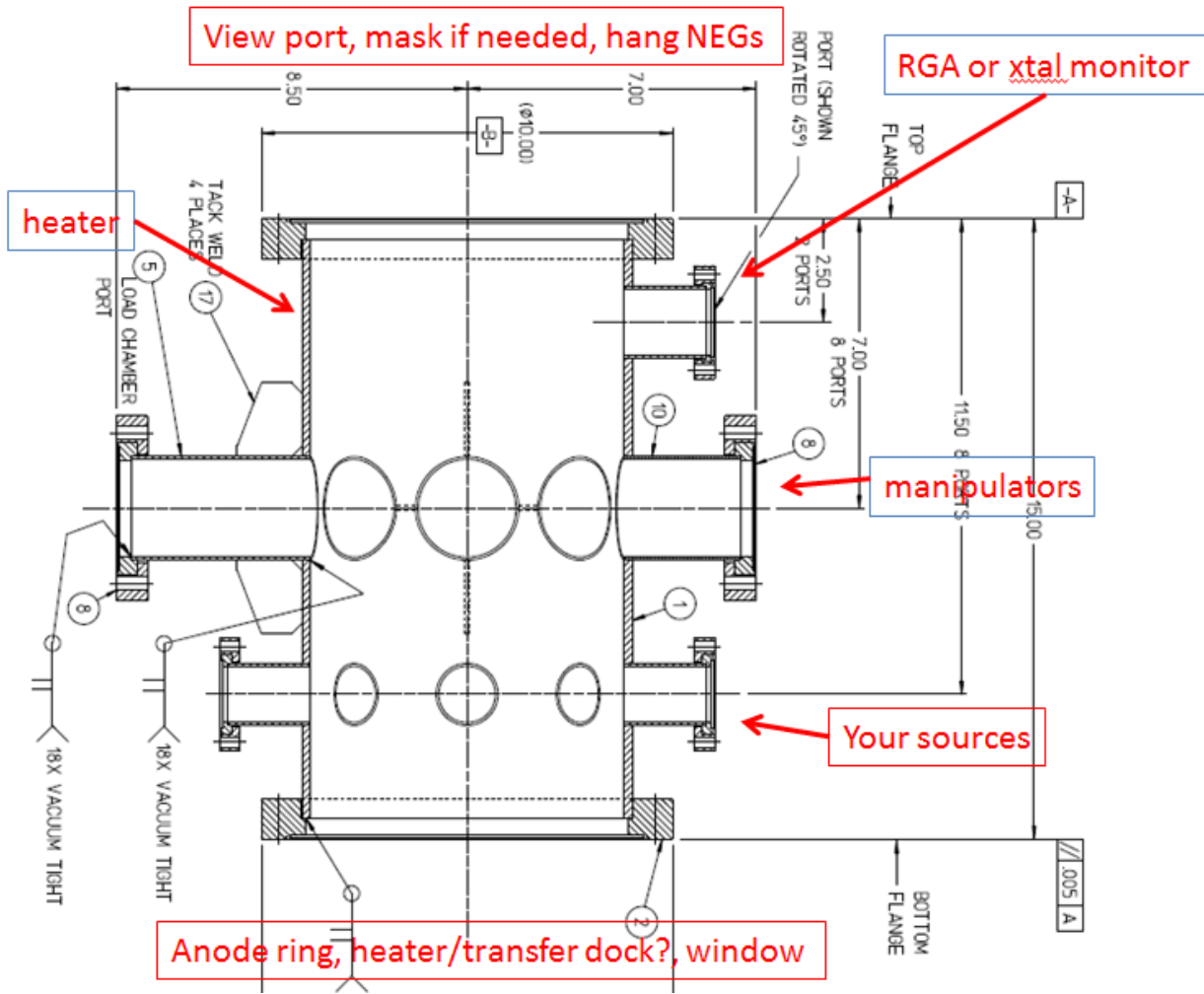
Status of TiN:aluminum dummy ball, and status of TiN:Cu electrode: Bubba working on copper ball. Still no quote from Deutchman re: motorized mount.

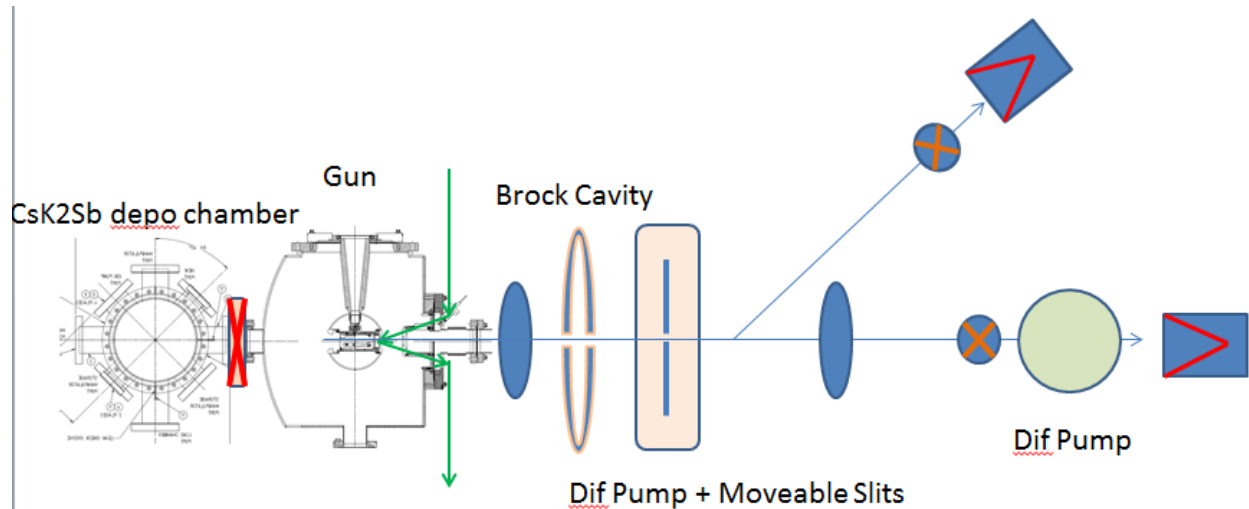
I propose we build a new anode, with larger diameter, with two off-axis holes, to input laser light and allow reflected light to leave. Then we don't build a light box. Drawbacks? mirrors placed near the exit 10"CF flange would preclude a solenoid placed really close to the cathode.... : Group seems receptive to this idea. John to draw this.

The diagnostic beamline: Yan owns this job. If we use 4 5/8 flanges and 3" beampipe, we might be able to use existing FEL components. We will solicit advice from Pavel E.

Update on removing big stuff we will never use again: Matt to ask Neil Wilson and Walt Akers if crane is on-site, would save us money. Two things to move out: SF6 tank and gun and stand. These things can replace similar but older items already in long-term storage.







- 1) Transverse emittance: divergent beam on narrow slit, move slit, capture beam profile on YAG viewer with video frame grabber (dipole OFF, solenoid 2 OFF)
- 2) Energy Spread: divergent beam on narrow slit, dipole ON, capture beam profile on YAG viewer with video frame grabber
- 3) Bunchlength: use brock cavity
- 4) Kicker: tilt the brock cavity, drive it with RF, look at beam on downstream viewer (dipole OFF, solenoids ON, slit OUT)
- 5) Lifetime: high current beam to dump, both solenoids ON, slit OUT, dipole OFF

Invitees to future meetings:

Facilities: what's up?

Pavel Evtushenko: modern diagnostics, YAG viewer pros and cons, recommended measurements at diagnostic beamline

RF: laser RF, buncher, choppers, 1/4CM, klystrons vs solid state

?