

Fabrication (LBNL except as noted) (as of 5/6/10)

1. Spool (bid awarded this week)
2. Source Insertion tube (add to spool order)
3. Mesh planes (in work, TAMU)
4. TPC base plate
5. PEEK rods
6. PEEK spacers
7. Field Cage Panels (outside electronics fab, Polyflon)
8. Field Cage Support Panels (outside electronics fab, any mfr.)
9. Posts for field cage panels
10. SiPMT (back reflector) support frame
11. Gas feed bulkhead fitting
12. Plenum
13. Hose or tube connections for plenum
14. Anti-Corona balls, rings, cable bend links, spool cable guides

Pre assembly

1. Assemble back reflector to SiPMY hex frame
2. Field Cage Panels
  - a. Trim and bend resistor leads for field cage panels
  - b. Use resistor solder fixture to hold resistors; solder to field cage panels.
  - c. Pre-tin post bases
  - d. Assemble posts to support panels (or fixture, if one)
  - e. Solder posts to field cage panels; remove support panels
  - f. Solder end resistors to support panels
  - g. Assemble support panels to field cage panels
3. Mesh Planes
  - a. Assemble rim reflectors to both EL region mesh planes
  - b. Check that no mesh wires are protruding on exterior surface; trim with razor blade if necessary
4. PMT Assembly
  - a. Place PMT mount plane with normal vertical, pins up, perimeter fixture
  - b. Insert support tubes into holes
  - c. Assemble PMTs to PMT mount plane
  - d. Place cover over PMT faces; clamp to PMT mount plane
  - e. Flip assembly over and place on table
  - f. Solder cables to PMT pins
  - g. Assemble PMT back mount plate to support tubes; tighten nuts
  - h. Assemble plenum to PMT back mount plate

## TPC Assembly

1. place lid horizontal; spool need not be attached
2. insert PEEK base nuts into base pockets
3. assemble base to lid
4. assemble PEEK rods to base nuts
5. assemble spacers #1
6. assemble SiPMT frame
7. assemble spacers #2
8. assemble mesh plane #1; mesh down
9. assemble spacers #3
10. assemble mesh plane #2 (EL); mesh up
11. assemble spacers #4
12. assemble gap reflector, if used
13. assemble mesh plane #3 (EL); mesh down
14. assemble spacers #5
15. assemble mesh plane #4
16. assemble spacers #6
17. assemble mesh plane #5
18. assemble PMT Assembly
19. assemble PEEK nuts to PEEK rods; do not tighten yet
20. use large machinist square to align stack perpendicular to base plate (lid)
21. stack may still have torsion; assemble field cage panels, if possible and check flatness. Then remove screws on one edge for each panel
22. tighten PEEK nuts progressively to 50 in-lbf.
23. finish assembly of field cage panels to mesh frames (minus HV cables)
- 24.