

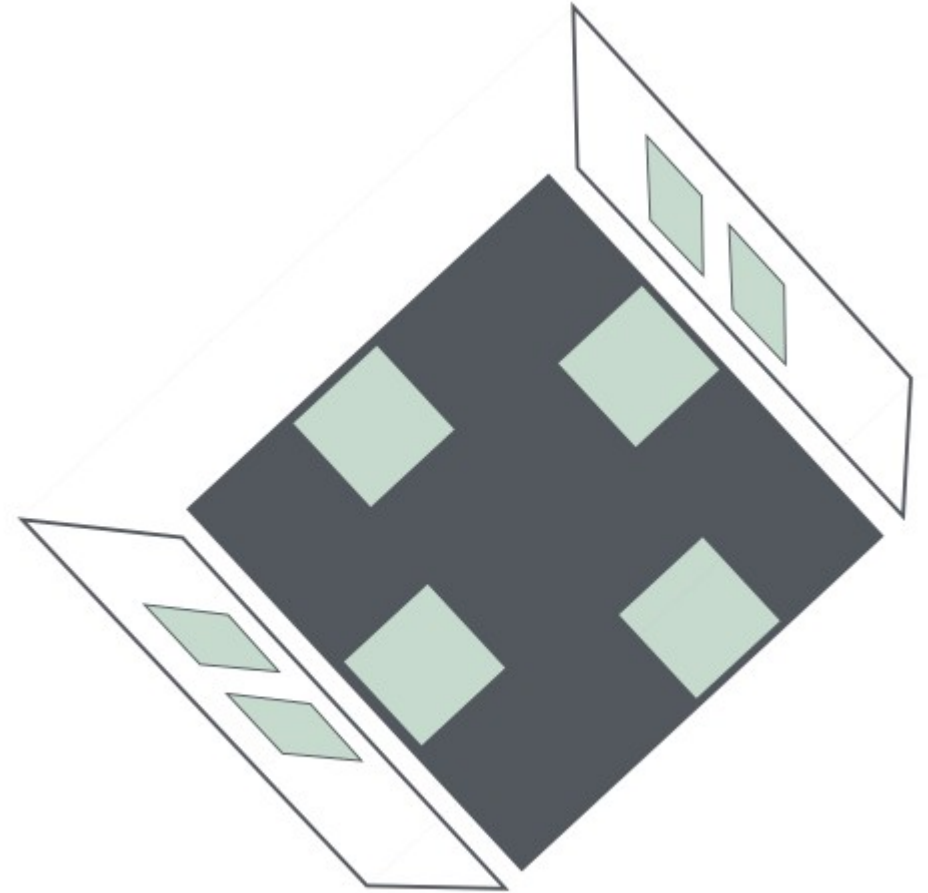
M1-November Inventory

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M0/M1 meeting - 6/09/2024

Plan A: installation october 24?

- 4 cathode modules
 - SoF readout
 - PoF power
 - HPK SiPMs
 - Double sided
- 4 membrane **full modules**
 - 2x HD-readout/FBK SiPMs
 - 2x VD-readout/HPK SiPMs
- Based on slides presented on wednesday by Flavio and Dante
- How long will we run? Plan to use PNS?
→ yes, new setup (Ajib input) → 3 week run?



Inventory: mechanics

- 8x M1-style frames
 - 2x membrane and 2x cathode modules from Nov 23
 - 2x cathode modules M0 that could potentially be refurbished
 - Need: 2 membrane and 2 cathode
- 8x cold electronics enclosures:
 - 2x membrane and 4x cathode from M1 BUT
 - M0-2024 cathode enclosures were much better
 - Need: 4x cathode latest version enclosures (and can use older ones for membrane)
- 2 supports for 2 membrane modules each
 - Have 1, need to make a new one and make sure it cant be mounted

Inventory: optics

- 2 full final design (larger area) FBK modules → 16 FBK flexis needed
 - 12 received in September
 - Old available 8 from M1 16 from M0
- 6 full HPK modules → 48 HPK flexis needed
 - 20 arriving in September
 - 8 spares (M1, module C3) at CERN
 - Checking possibility to get more....
- 8x 5.5 mm no dimples WLS:
 - 4x 5.5mm 40mg/kg WLS now at CERN BUT 3 to be used in M0 (?) → leaves 1
 - From M1: 2 in membrane modules, 2 in cathode – one has ptp on it.
 - Or we use the ones with dimples? → better new ones. 6 to have spares.
- Filters:
 - If 4 single sided + 4 double sided → need 192: 128 top, 64 bottom
 - 64 ZAOT Dfilters from Module 1 at CERN
 - 16 ZAOT Dfilters with Carla
 - 96 PE that could be cleaned (*procedure doable in PDS room+CERNchemistry workshop) and used on the bottom side of the cathode/ or single sided modules
 - ptp glass: 105 coated at CERN, 64 to be used in ProtoDUNE → there should be 41 available
 - Annoyingly: $64 + 16 + 41 = 121$.. we're 7 short :P → none at Naples (gone to CIEMAT). → CIEMAT: 16 or 32 substrates?

Inventory: membrane electronics

- HD-style readout for 4 membrane channels:
 - 3(?) cold amplifiers + 1 DMEM in hand
 - Readout 4 channels/1 board? Redesign of DMEM? (old, warping version still in use)
- VD-style readout for 4 membrane channels:
 - 2 boards available (1 not populated) BUT 2022 version
 - Need work on design + fabrication of final version
- Flange and cables:
 - 4 blue cables (or 6? VD old-style needs one cable per channel?)
 - 2 cables in use in M1, flange has 4 DB15 (do they all work?)

Inventory cathode electronics

- 4 SOF readout boards:
 - 4 DCEM v1.31 → in hand. 4 at APC, N at Fermilab
 - 4 laser adapter 2 stage → in hand at APC and Fermilab
 - 8 lasers → in hand. use TalBO spares or new ones at APC
 - 4 DCDC → need new? (and what voltage) → need to produce (\$)
- Fibers: current ones in good state, but
 - Potential to install all continuous fibers like in C1?
 - Long fibers for 3 modules (12 + spares)
 - Change of flange?
- PoF
 - 16 OPCs (4 OPC boards) → available from M1 plus other spares around.
 - 4x PoF enclosure: no enclosure used before. Need new ones... compatible with existing PCBs?

Warm electronics

- SoF:
 - 1x DAPHNES V2 (previous runs showed cathode and membrane can't share, noise issues weren't understood)
 - Cathode needs 4 AFE (2 channels per AFE limitation)
 - >4x 2-channel SoF receivers available (now 5 at APC, 1 Milano, 1 Fermi?) - CSU one not available
 - Goal to do a first test of 8-channel receiver → requires new board fabrication and large modification of one AFE – never done before.
 - Proposal: Milano DAPHNE as usual
- Membrane:
 - 1x DAPHNE v2.
 - 2x warm side card for VD-style?
 - Proposal: take one from NP04 or have the Fermi one.