

Coordinate Detector Update

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Scintillator production

- CDet scintillator strips being produced in the extrusion facility at Fermilab.
- 220-cm long strips being extruded with a cross section of 0.7 cm \times 4.0 cm with a 3 mm \varnothing central hole along the length of each strip.
- Top and bottom surfaces of the extruded scintillator will be machined to make thickness uniform to 5.0 ± 0.08 mm.
- 100+ strips received at JLab for testing the machining of the surfaces and checking the integrity of the central hole.



- All strips were checked at Fermilab w/ 2 mm \varnothing WLS fiber, only 2 blockages found.
- JLab's machine shop re-surfaced the strips to required thickness while keeping the central hole intact.
- Sample strips shipped to Eljen for machining at the end of January, 2015.
- Full production of scintillator at the end of February, 2015.

- 2 mm \varnothing BCF-92 fast blue to green shifter:
 - emission peak λ 492 nm (PMT's peak λ 420 nm)
 - decay time 2.7 ns
 - 1/e length >3.5 m

- Purchase order has been placed w/ Saint Gobain at the end of January, 2015; 10-14 weeks delivery time.

- Sample fiber to be received at JLab for testing w/ the scintillator strips.

Support structure mechanical design

- Central piece of CDet's module design is the coupling of maPMT and WLS fiber adapter.
- Parts for testing the integrity of PMT-WLS assembly structure design were fabricated and tested.
- Overall engineering design of scintillator module and support structure is almost complete (total of 23 drawings for CDet frame).
- All drawings have been checked for completeness and integrity.
- Selection of vendors and preparation of POs pending.

- Tests of the functionality of the 16-channel amplifier/discriminator card, A/D, based on a NINO chip and the FASTBUS farm for DAQ are in progress.
- Geometry of NINO A/D board and HV distribution system has been identified.
- An equalizer board model for the A/D card for adjusting gain variations in the maPMTs has been developed.
- Specialty connectors for HV mainframe and distribution system have been procured.
- LVDS → ECL level translators procured; NINO A/D front-end boards and DAQ CPUs to be ordered soon.