

260-L LAr System Progress Report

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Lab Safety and Space Management

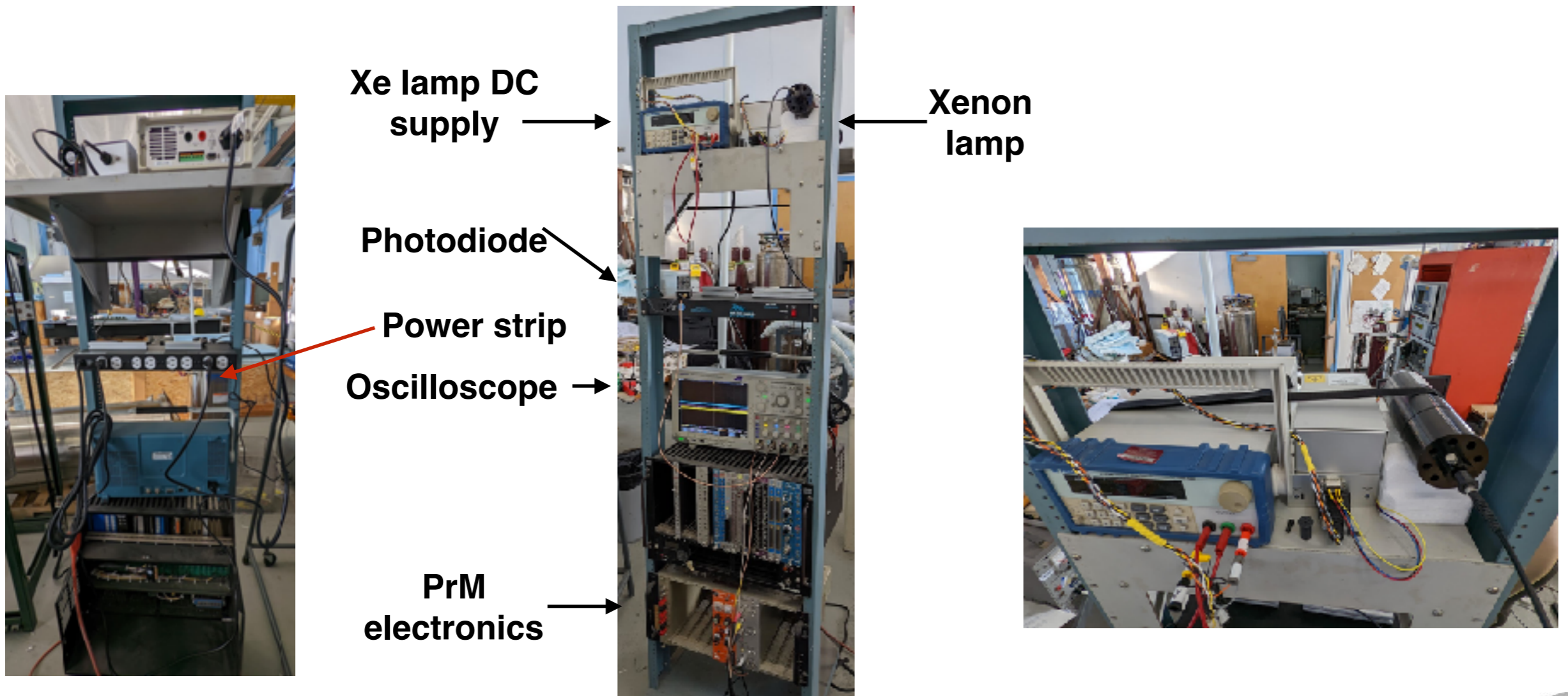
- COVID level in Suffolk County is MEDIUM now
- Face masks are optional onsite at BNL
- CRP coldbox passed the safety review
 - Final walkthrough was completed, ESR approved
 - CRP has been moved into the coldbox
 - The coldbox is planned to be filled next week after the holiday
- Crane operation training
 - It was found additional electrical worker safety training was required for me to operate the crane because it requires turning on/off a 480V circuit breaker
 - The training requires 4 hours of virtual class training with lecture, scheduled on Dec. 12th
- Heating in highbay restored



Preparation for the next run

▸ Xenon lamp set up

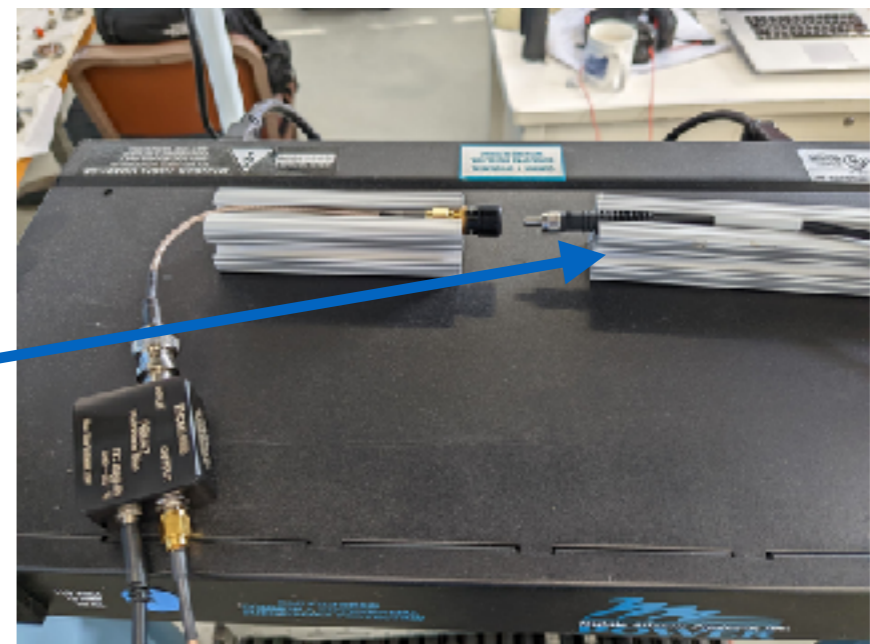
- Added a crate mount power strip for the AC power supply
- The Xenon lamp light source equipment are all on the mobile crate now
- Xenon lamp is set on top over the PrM flange for fiber penetration



Preparation for the next run

▸ Xenon lamp testing and debugging

- Xenon lamp did not illuminate after first powered on
 - The power module works fine with pulsing
 - It was found the cover was loose and light bulb pin not fully engaged
 - Pushed the light bulb in for a very small distance and light output restored
- Si photodiode for readout trigger testing
 - A si-photodiode using one fiber from the Xe lamp to provide the readout trigger
 - The diode and bias unit are both Thorlabs catalog products

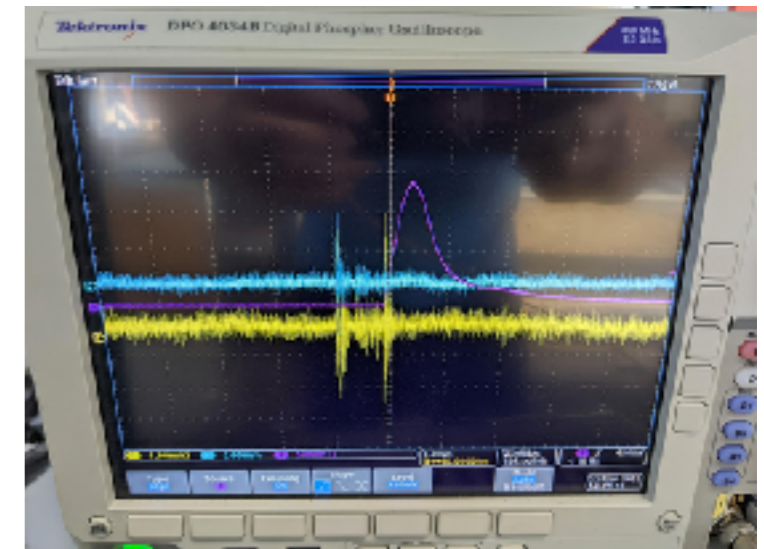
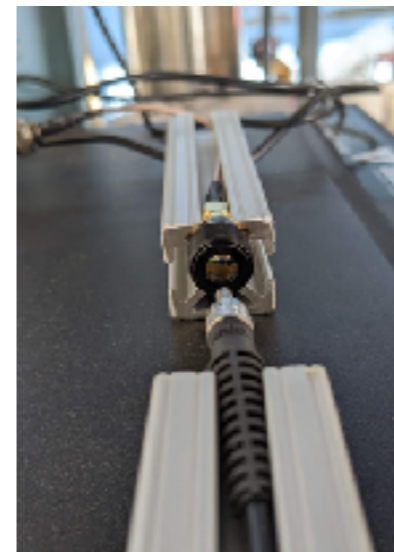
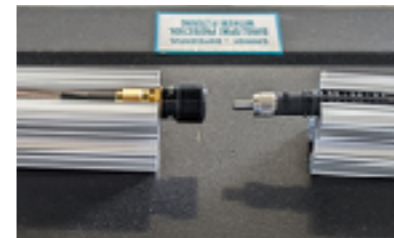
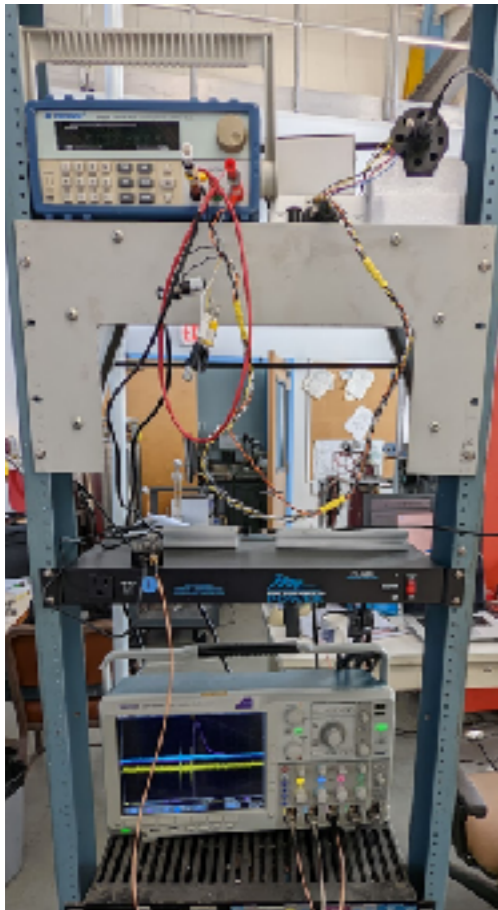


Preparation for the next run

▸ Xenon lamp testing

- Photodiode readout test

- The Xe lamp output guide to the photocathode with free couple in the air
- Now support on Al extrusion blocks, an enclosure box with be made later
- Signal amplitude is sufficient for triggering with ~ 2 V amplitude with 24 V DC
- Strong noise pickup observed on the PrM channels
 - It is known pickup from the Xe lamp
 - Tried to bias the photodiode with an individual DC supply
 - No observable change on the noise pickup, additional shielding needed



Preparation for the next run

▶ Xenon lamp for PrM

- Cleaning up the cabling on the Xenon lamp crate cart
- Construct a dark box for the enclosure of the trigger photodiode
- Install the UV fiber plug feedthru on the top flange
- Install the fibers from the Xenon lamp to PrM Cathode

