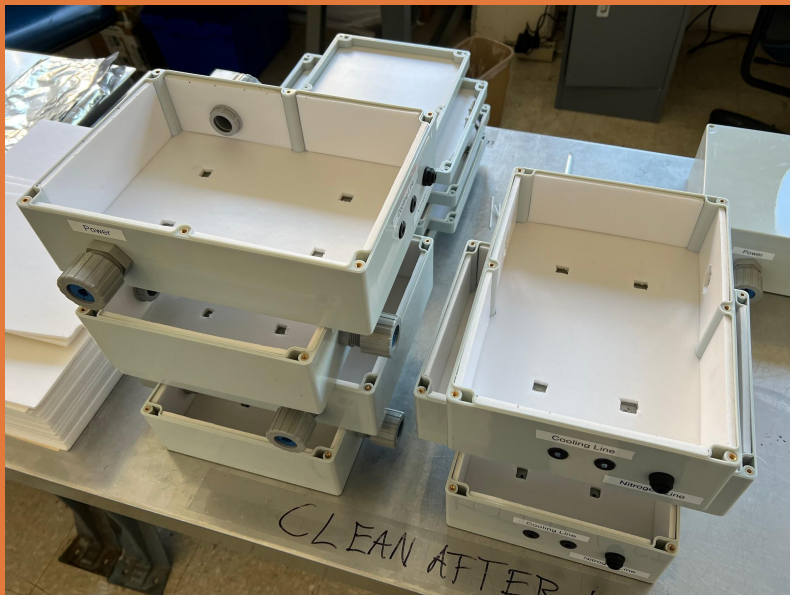


Current State: Cold Boxes

Utilizing the University of Illinois at Chicago's
Cold Box Documentation

On behalf of the Cornell CMS group
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Context Notes



Based off UIC

The project was made possible with the documentation of UIC Cold Boxes detailed in the appendix.



Experience and Advice

This presentation briefly details the current state of the 8 Cold Boxes being produced in Cornell University.



End Goal

These 8 Cold Boxes will be used by universities and institutions to test modules used in the Inner Tracker of the CMS Experiment

Cold Box

- The Cold Boxes have their insulation, cord grips, and adapter plate installed.
- 3 sensors per box (humidity and temperature sensors) set and placed across all 8 boxes.
- All have been seal tested by running water through the adapter plates

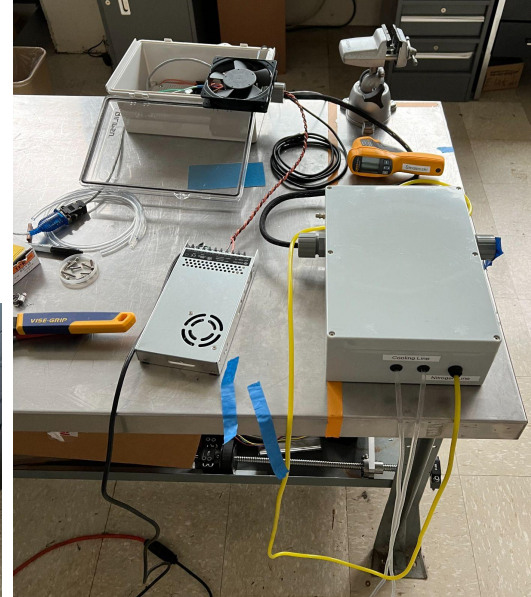
Electronics/Power Supply Box

- Electronics Box have been fully connected
- All cables have been soldered to length to fit through the cord grip and still have a considerable amount of length left.
- Electronics have been able to communicate with lab computers for testing and peltier control

Current Testing and Missing Materials

- All Cold Box adapter plates have been thoroughly checked for leaks
- DHT22 humidity sensor and 2 thermistors per box have all been tested and communicated with.
- Lengthy tubing for nitrogen gas and water lines have been separated into respective kits
- Recently, testing has begun utilizing
 - Nitrogen gas and close lid for humidity control
 - Water chiller to reach lower temperatures
- Waiting on machine shop for module holder plates.

Water Chiller



Cold and Electronic Boxes connected together

Appendix

This project was made possible with the UIC Cold Box Documentation

[Link to Documentation inside Google Slide](#)

Additionally, the documentation above can be found in the following High Luminosity LHC upgrade Twiki link

[Link to US TFPX Phase 2 Documentation - Twiki](#)

