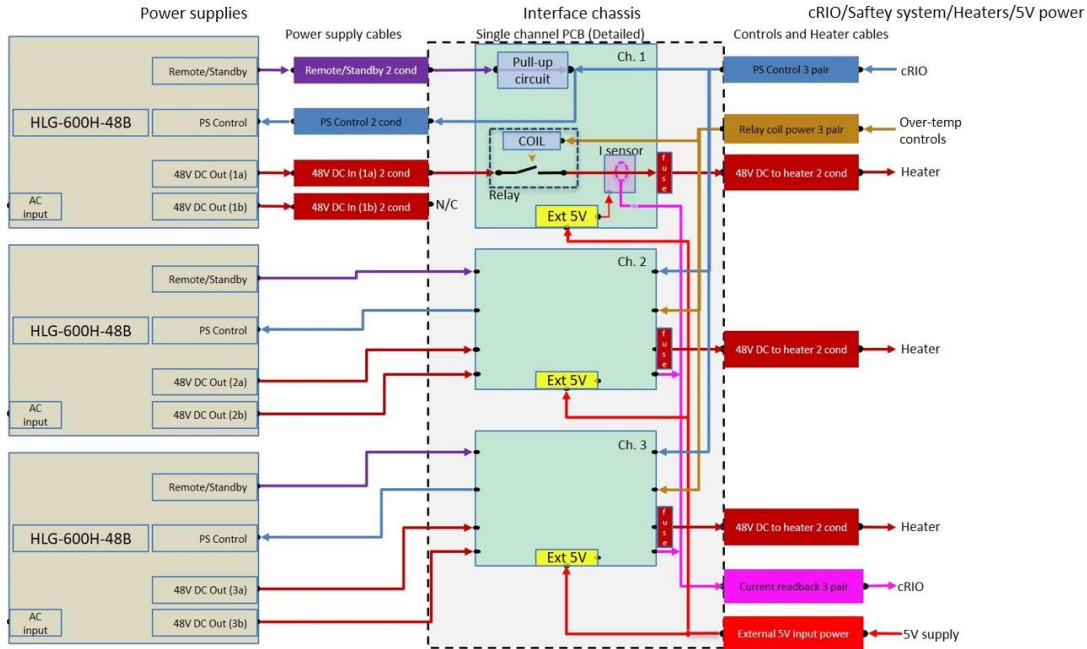


### Hall A – ECAL

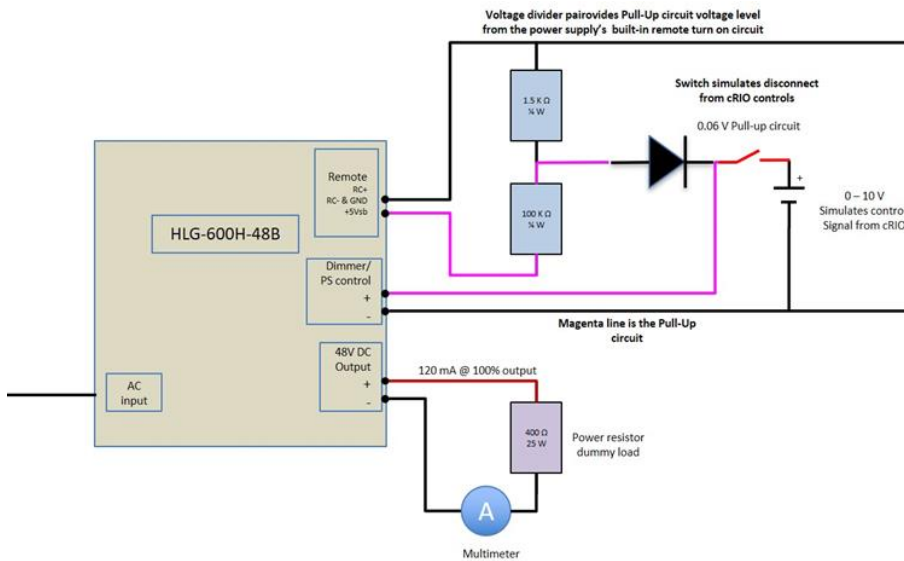
Marc McMullen

- Developed diagram for the power supply controls interface chassis



Connections from power supply controls interface chassis (middle dashed rectangle) to the power supplies (left) and cRIO, safety system and heaters (right).

- Modified power supply control pull-up circuit, which keeps the heater power supplies from outputting full voltage if the controls signal is disconnected, to include a diode that will prevent current from flowing from the 0–10 V circuit to the power supply control circuit



Power supply control pull-up circuit.

### Hall A – Møller

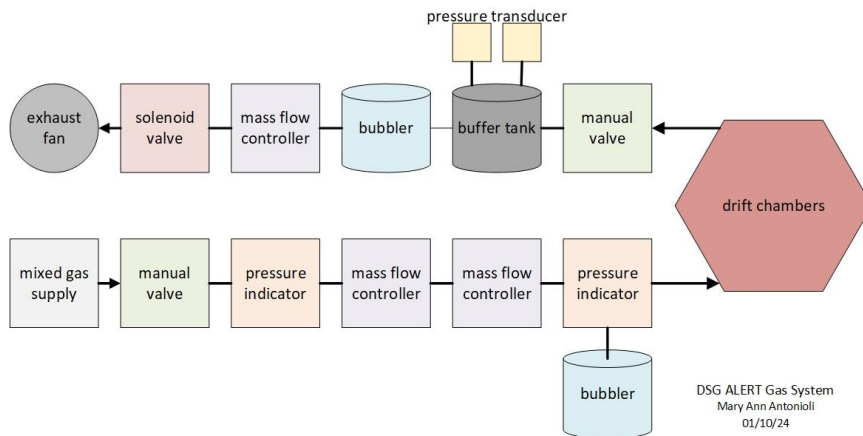
Brian Eng

- Continued setup of TM3 MPS in Test Lab
  - ★ Added Boolean status process variables for flowmeters
  - ★ Wired and tested voltage taps that go through isolation amplifiers
    - One isolation amplifier has a bad channel; unable to configure full scale and zero
  - ★ Verified MPS controller works under external control power and changed IP to local one for security reasons
    - Only devices on local network will be able to communicate with power supply

### Hall B – ALERT

Mary Ann Antonioli, Marc McMullen

- Designing and instrumenting ALERT drift chamber gas controls system



Visio drawing of the ALERT drift chamber gas controls system.

### Hall C – NPS

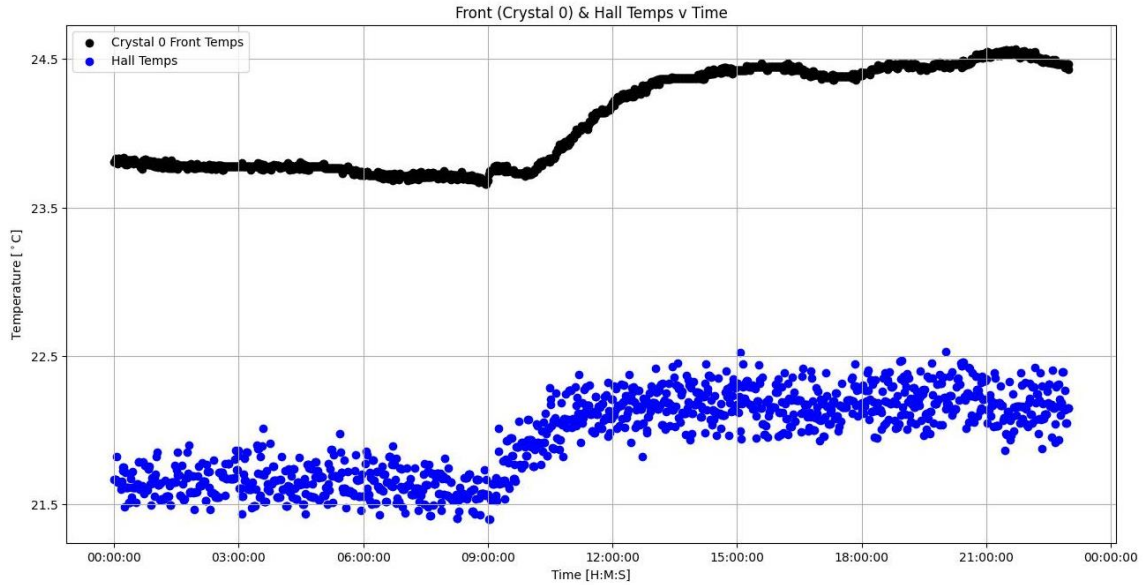
Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, and Tyler Lemon

- Debugging control and monitoring LabVIEW program, vers. 2.
  - ★ When a sensor is disabled, the indicators are not showing disabled for the sensor and for interlocking and averaging, which should also disable
  - ★ Removed sensor enable breakouts and fixed code in the subVI that disables interlocking and averaging, if needed.
    - Code appears to work correctly now, but interlock and averaging indicators not working in LabVIEW, but do in Phoebus
- Made plots of front and back crystal 0 temperatures vs ambient temperatures using mySampler MYA command to export datapoints
  - ★ Front and ambient  $r = 0.869$
  - ★ Back and ambient  $r = 0.869$
  - ★ Front and back  $r = 0.997$

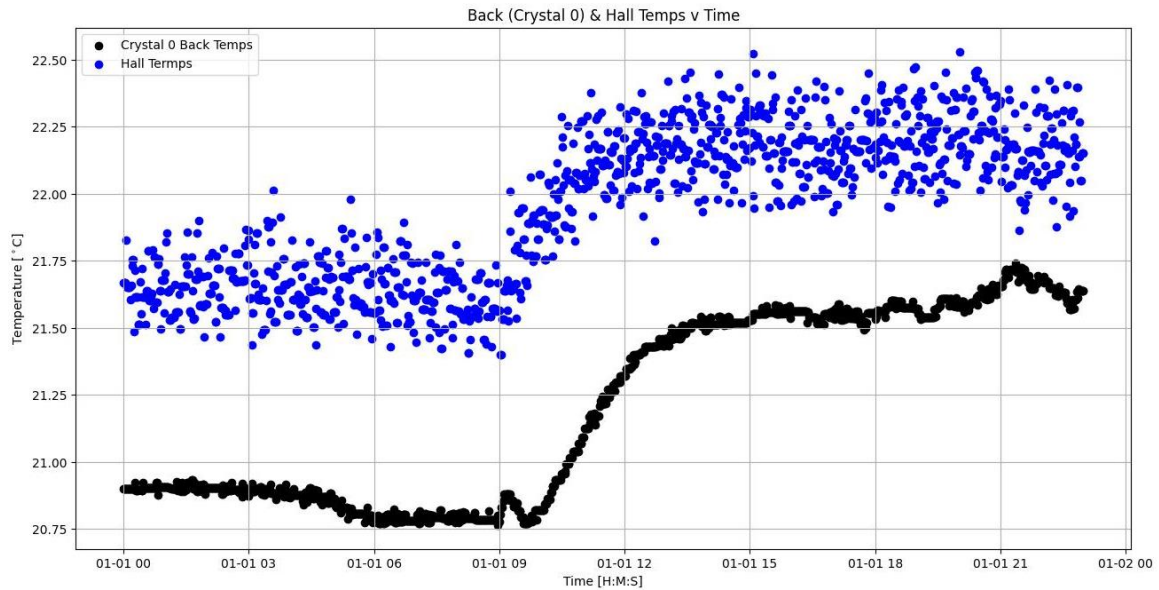
# Detector Support Group

*We choose to do these things "not because they are easy, but because they are hard".*

**Weekly Report, 2024-01-17**



Front crystal temperatures and hall ambient temperatures as a function of time.



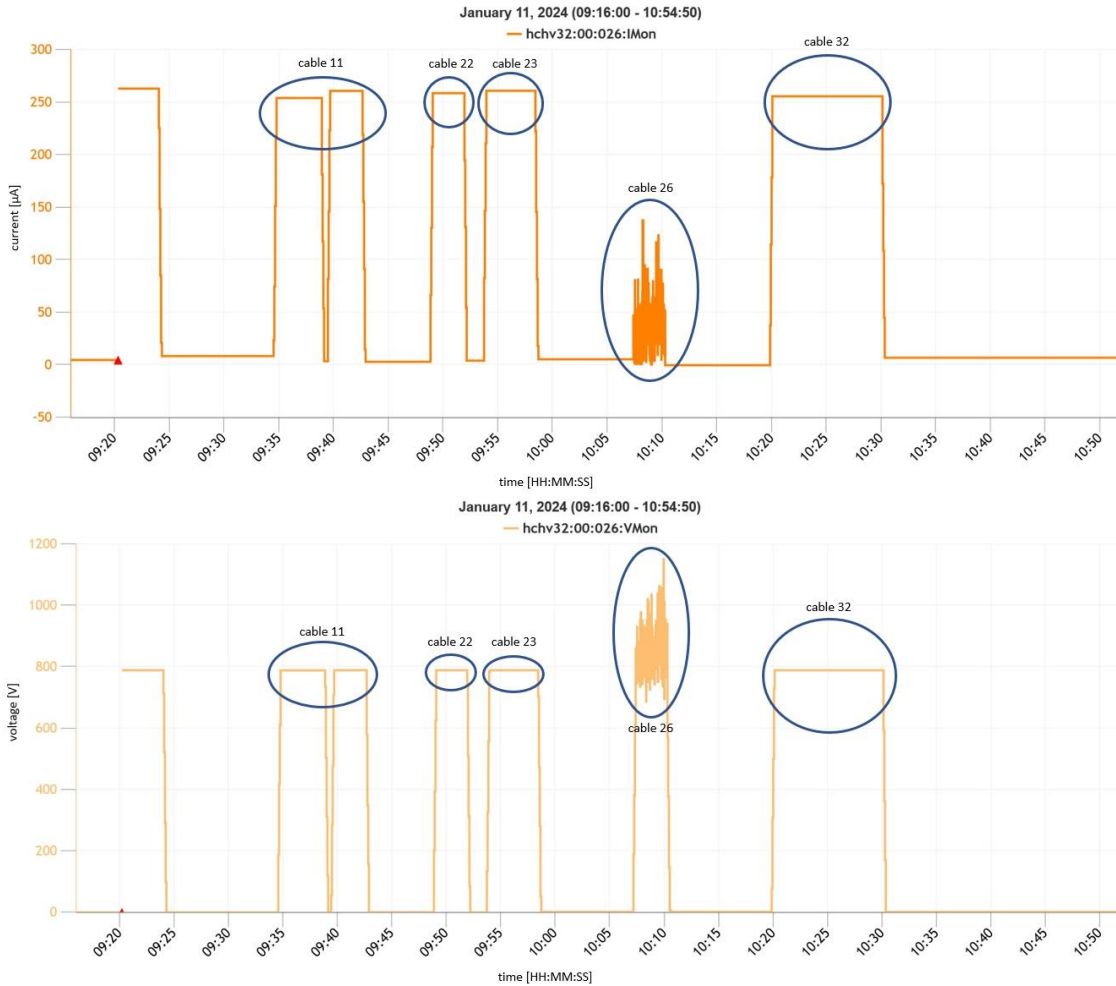
Back crystal temperatures and hall ambient temperatures as a function of time.

- Tested five high voltage cables in Hall C
  - ★ Of the five cables tested, only cable #26, channel 26 had a problem during testing, a fluctuating voltage and current, possibly caused by a pushed in contact on the Radial connector

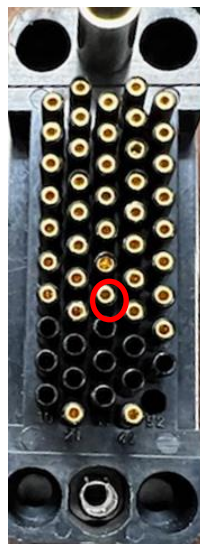
# Detector Support Group

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## Weekly Report, 2024-01-17



Screenshots of monitored current (top) and monitored voltage (bottom) for channel #26 of five cables tested.



Pushed in contact on Radial connector circled in red.

## Hall D – FCAL2

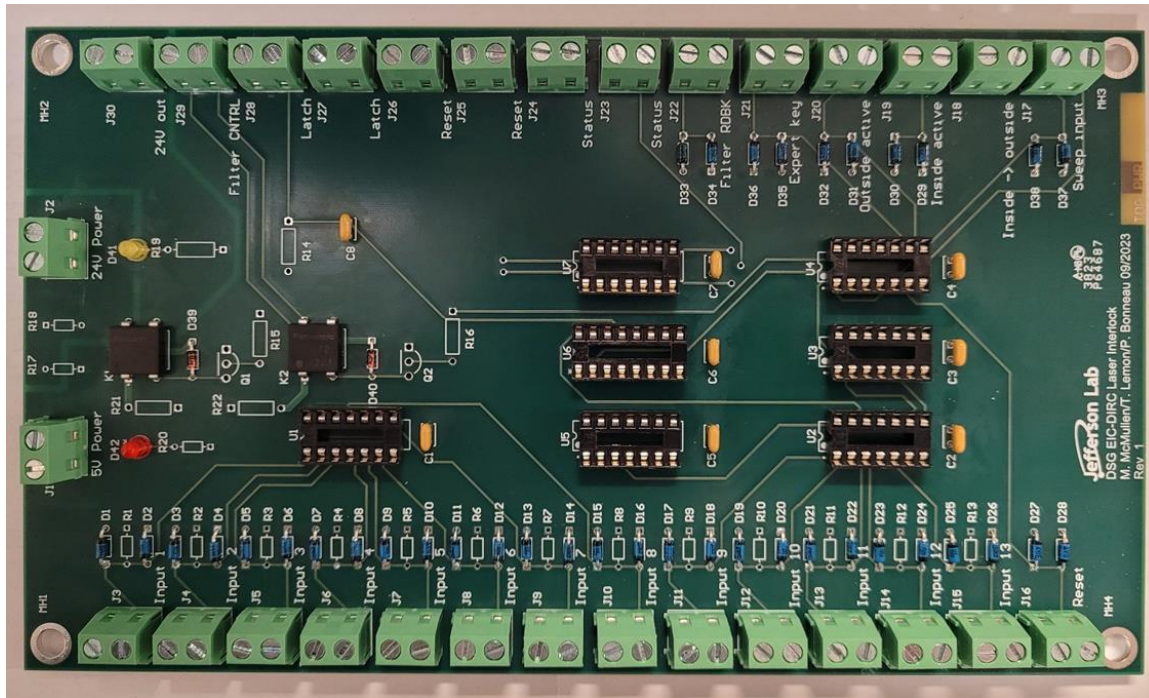
Mindy Leffel

- Populated 40 PMT bases; 1240/1750 completed
- Cut and stripped 220 wires

## EIC - DIRC

Peter Bonneau, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, and Marc McMullen

- Started populating laser interlock board



Partially populated laser interlock board.

- Developing code to independently test Phoebus alarm system, using two computers
  - ★ One computer functions as an EPICS softIOC server for simulating laser interlock process variables, the other as an EPICS client, monitoring the interlock process variables on the network via Phoebus

## EIC – RICH

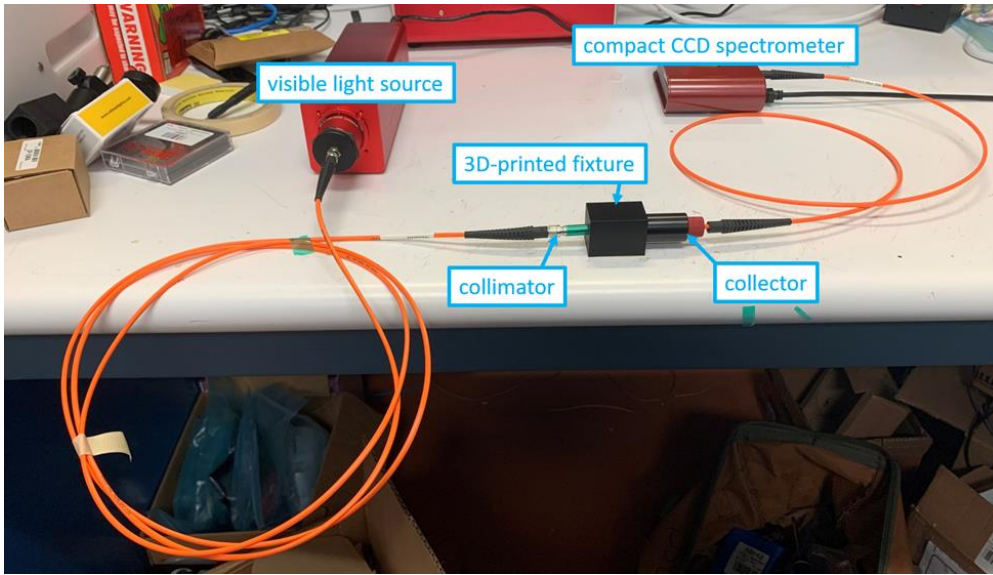
Tyler Lemon

- Set up new UV reflectivity test station to test reflection measurement with visible light; components worked as expected

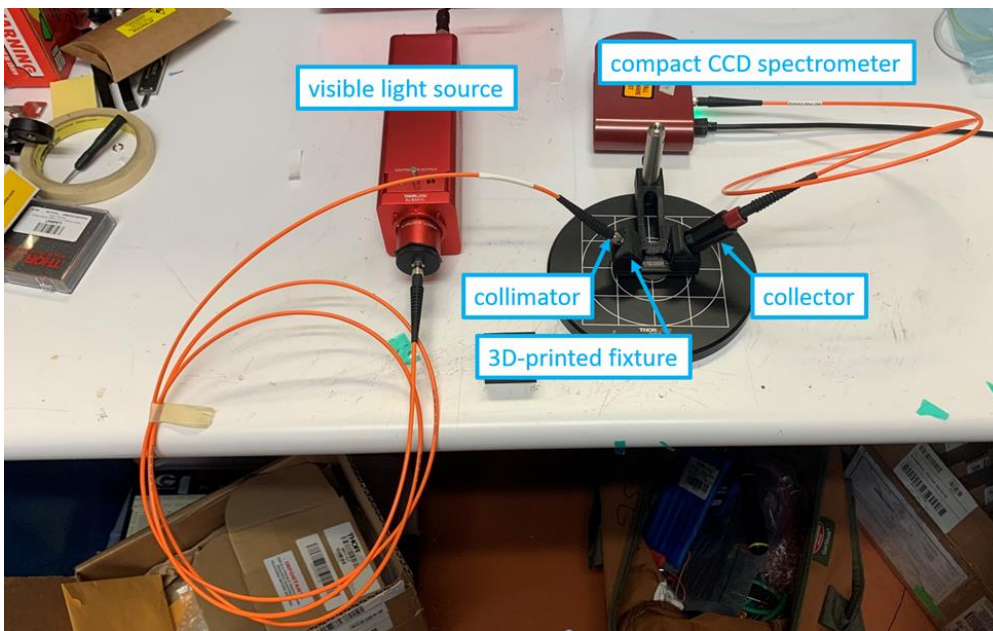
# Detector Support Group

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**Weekly Report, 2024-01-17**



Test setup for reference measurement without mirror.

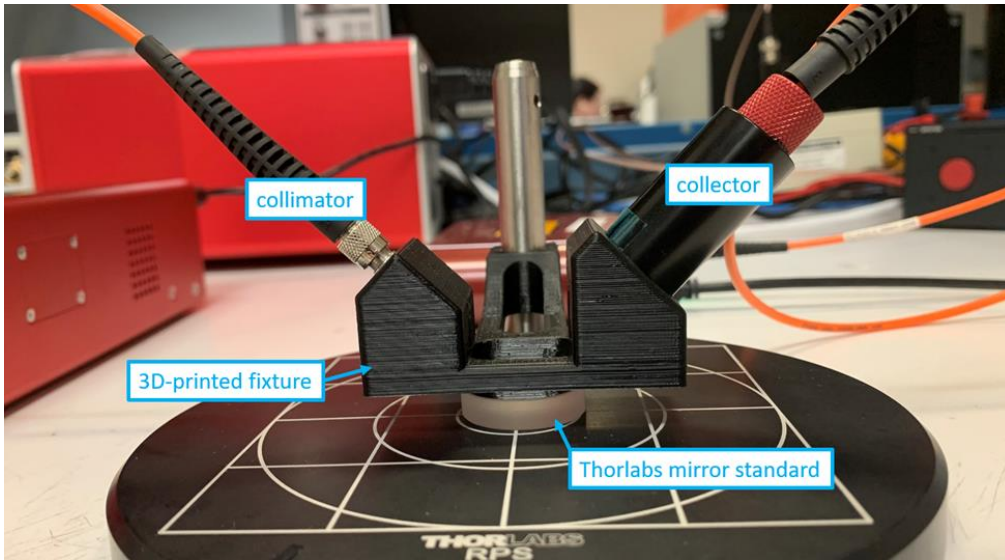


Test setup for reflectivity measurement of mirror.

# Detector Support Group

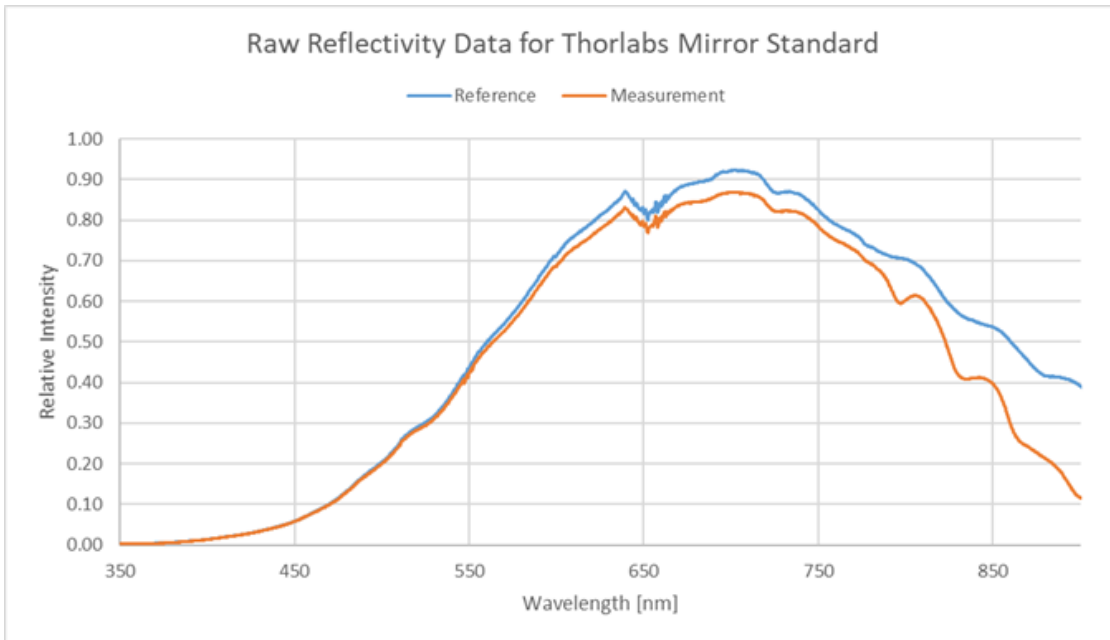
*We choose to do these things "not because they are easy, but because they are hard".*

**Weekly Report, 2024-01-17**



Close-up of 3D-printed fixture that holds collimator and collector at 45° to the mirror for reflectivity measurements.

- ★ Data acquired using Thorlabs’ Optical Spectrum Analysis program, which acquired 1000 samples with 200- $\mu$ s CCD exposure time, and averaged them.



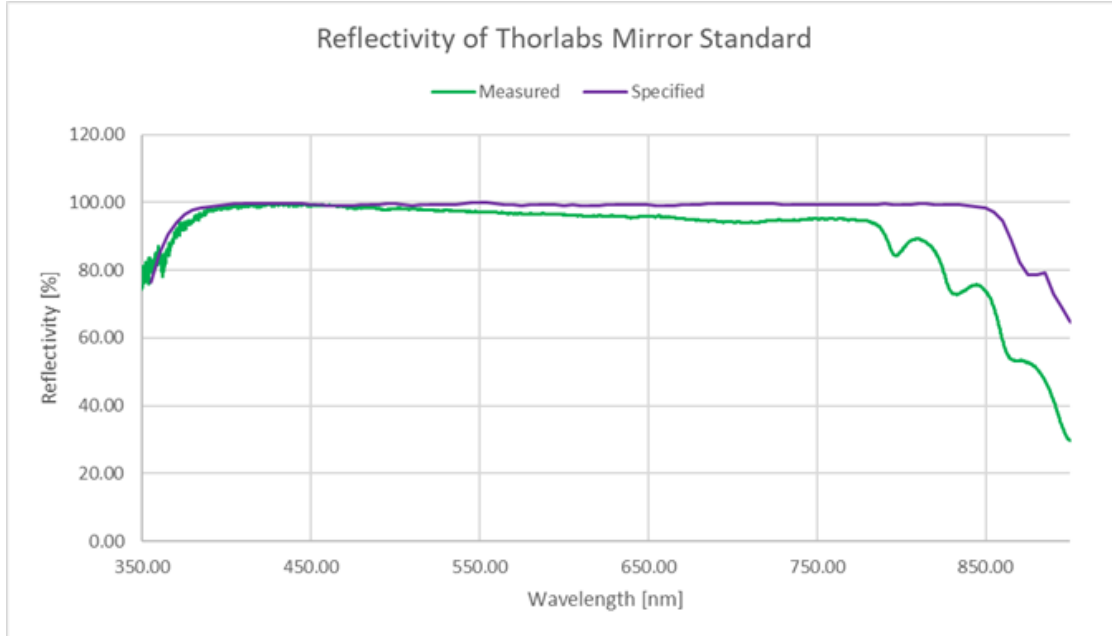
Raw data from Thorlabs compact CCD spectrometer. Blue line is reference data, or measured intensity of light without test beam reflecting off a mirror. Orange line is measurement data, or measured intensity of light with test beam reflecting off mirror.

## Detector Support Group

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**Weekly Report, 2024-01-17**

- For a Thorlabs mirror standard, calculated reflectivity is close to specified reflectivity



Calculated reflectivity (green line) and specified reflectivity (purple line) of the Thorlabs mirror standard.